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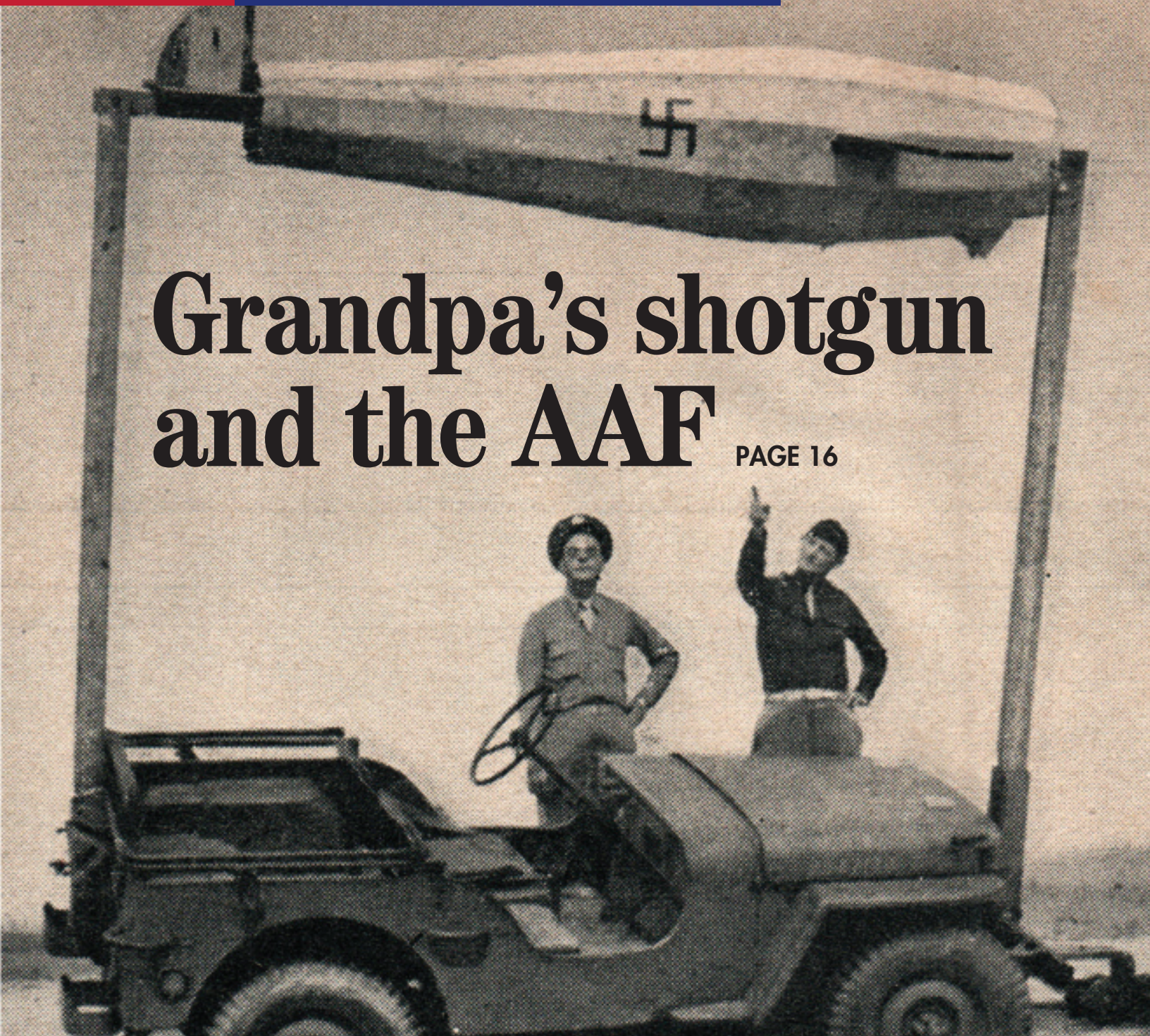

Grandpa's shotgun and the AAF

National Historical Journal

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The Civil Air Patrol National Historical Journal is published biennially by a staff of academic historians and professional editors. As such, we recognize the demand for quality publications reflecting a variety of interests to our readers, and strive to provide the best in feature and thought-provoking articles. We trust you'll enjoy this publication and consider contributing to its mission in providing a forum for Civil Air Patrol's great traditions.

We receive quality submissions and letters to the editor from across the CAP community. Email contributions to mhenderson@cap.gov.

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About This Issue

If one had to pin a theme to this edition of the *National Historical Journal,* it would be "tenuous ties to air power." Featured in this edition are articles on World War II air power, the relatively short-lived art of flexible gunnery, and the role skeet and trap shooting played in training World War II aircrews and gunners, the Cold War-era Ajax missile-defense system, and Maryland Wing's preservation and re-purposing of a former Ajax base outside Baltimore.

It also includes four articles about people:

- A tribute to Charles E. Compton, a World War II submarine chaser;
- A biography honoring the legacy of Daniel "Chappie" James, the first African American U.S. Air Force four-star general;
- An interview with Air Force Maj. Hila Levy, a former CAP cadet and Puerto Rico Wing's first Rhodes Scholar, describes her roots in CAP; and
- An interview with Dr. (Lt. Col.) Sherry Jones, describing CAP's critical incident stress management program.

Wrapping up this edition are brief descriptions and histories of inactive Numbered Air Forces. We've dusted off two cartoons as an addition, each from the archives of *CAP News* and its predecessor, *CAP Times.* Be on the lookout for spotlight articles on each artist in a future edition of the *Journal.*

Our efforts would be in vain without you, our readers, so we send a hearty 'thank you' for your interest and support. We also welcome your feedback and participation – tell us what we should continue to do, and how we might improve the *Journal.* Do you want to be published? I'd love to hear your topic requests and article ideas as they relate to our aerospace and CAP history themes. Do you have a story to share that relates to CAP? Our next edition will honor CAP's 80th anniversary. Having a scholarly article in the *Journal* is one of the suggested performance requirements for the CAP historian specialty track. I welcome your feedback, ideas, and article submissions at mhenderson@cap.gov. ▲

A life and legacy to CAP

Col. Charles E. Compton
1916-2020

COURTESY PHOTO

Members of CAP Coastal Patrol Base 1 at Atlantic City, N.J., with Col. Charles E. Compton, upper right and inset.

By Maj. MARC R. HENDERSON

Col. Charles E. Compton (1916-2020) lived a full life, and much of it was spent with Civil Air Patrol. The organization gave him, as a young man, the opportunity to serve his country during World War II. He later commanded CAP units alongside his sons. Col. Compton's Congressional testimony about his war-time experience helped earn Civil Air Patrol the Congressional Gold Medal. As a centurion at nearly 104 years old, Col. Compton passed knowing his legacy would live on through both a loving family and the Civil Air Patrol Composite Squadron named in his honor.

Born and raised in Chicago's South Side, Col. Compton went to the University of Chicago Lab Schools and Lake Forest Academy. At Dartmouth College, he started a small flying club and earned his pilot's license in 1937 at age 21. After earning a bachelor's degree from Dartmouth he attended the University of Chicago Business School.[1]

When the United States entered World War II, Col. Compton was eager to do his part. Despite his willingness and his flying experience, neither the Army Air Forces nor the Navy allowed him to enlist because he had only one kidney; he lost the other in an accident when he was 16 years old.[2] His desire to serve and do his part for the war effort was so strong, he left behind two jobs in Chicago — one as an advertising salesman for the Daily News, and the other as a plant worker that manufactured aircraft parts — and he moved to New Jersey to fly with the Coastal Patrol. Compton said the move was prompted by "a desire to be more actively engaged in the war effort."[3]

Atlantic City was home to CAP's first coastal patrol base.[4] In his early 20s, Col. Compton served as an observer, flying on missions to hunt for Nazi U-boats and provide air escorts for American merchant ships as they steamed along the Eastern seaboard. As a volunteer member of the fledgling CAP — established Dec. 1, 1941 — he flew

1. Claire Hao, "Charles Compton, Civil Air Patrol Pilot during World War II and Ad Salesman, Dies," *Chicago Tribune*, July 7, 2020, https://www.chicagotribune.com/news/obituaries/ct-charles-compton-obituary-20200707-gavcbio5zja4ncgz4wuskbzb7q-story.html.
2. Claire Hao, "Charles Compton, Civil Air Patrol Pilot during World War II and Ad Salesman, Dies," *Chicago Tribune*, July 7, 2020, https://www.chicagotribune.com/news/obituaries/ct-charles-compton-obituary-20200707-gavcbio5zja4ncgz4wuskbzb7q-story.html.
3. "CAP World War II Volunteer to Be Honored with Distinguished Service Medal," AviationPros.com (Endeavor Business Media, LLC, June 10, 2011), www.aviationpros.com/home/press-release/10390111/cap-world-war-ii-volunteer-to-be-honored-with-distinguished-service-medal.
4. Janice Wood, "CAP Volunteer to Be Honored with Distinguished Service Medal," *General Aviation News*, June 10, 2011, https://generalaviationnews.com/2011/06/12/cap-volunteer-to-be-honored-with-distinguished-service-medal/.

missions on numerous aircraft. "The duty was dangerous," he recalled. "There was nothing like GPS," he said, "and members used partially sunken American merchant ships, which were plentiful, as a navigational tool."[5]

After the war, Col. Compton purchased numerous surplus planes and remained an avid flyer.[6] In September 1947 he made the front page of the *Chicago Tribune* for alighting his Grumman G44A Widgeon amphibian on Lake Michigan to rescue two boys adrift in a surplus army raft.[7]

As a CAP captain in the 1960s, he proudly served as a member of the Illinois Wing alongside his two sons, who were CAP cadets while he commanded the Evanston and Morton Grove squadrons.[8]

Compton in 2011, at age 94, remarks after receiving CAP's Distinguished Service Medal.

COURTESY PHOTOS

As a lieutenant in CAP in World War II, Compton sits in the observer seat of Coastal Patrol Base 1's Grumman G-44 Widgeon.

CAP awarded Col. Compton the Distinguished Service Medal in 2011, along with a promotion to colonel. On hand for the presentation was the entire membership of the Palwaukee CAP Squadron — which had "adopted" Compton — along with U.S. Sen. Mark Kirk, R-Ill.; U.S. Rep. Jan Schakowsky, D-Ill.; the Rev. Jill Paulson, granddaughter of CAP founder Gill Robb Wilson; CAP's national commander, Maj. Gen. Amy S. Courter; CAP's national vice commander, Brig. Gen. Charles Carr; and members of Compton's family, including his daughter, Ann Compton, who at the time was the White House correspondent for ABC News.[9]

In 2012, Compton's testimony was one of three cited in the *Congressional Record* by Sen. Thomas Harkin of Iowa, to punctuate the war exploits of Civil Air Patrol as it was being considered for the Congressional Gold Medal.

> Lt. Charles Compton, who flew from Coastal Patrol Base 1 at Atlantic City, New Jersey on antisubmarine and convoy escort missions. He recently noted: Convoys could be attacked at any time. We had a war going on and the threat of German submarines off the east coast. Our job was to make it less easy for the German submarines to surface without being detected.

On his 101st birthday, the Illinois Wing named a squadron in his honor, the Colonel Charles Compton Composite Squadron. Members of the squadron

5. Awarding a Congressional Gold Medal to Members of the Civil Air Patrol, S 418 112th Congress, *Congressional Record* (May 10, 2012), S3071-S3073, www.congress.gov/112/crec/2012/05/10/CREC-2012-05-10-pt1-PgS3071.pdf
6. Charles Compton CAP Promotion / Award Ceremony (Part 2 of 4), YouTube.com, 2011, www.youtube.com/watch?v=v6j|PoU8B3k
7. Plane Saves Two Boys on Raft in Lake," *Chicago Tribune,* September 14, 1947, p. 1, www.newspapers.com/image/370461082.
8. Charles Compton CAP Promotion / Award Ceremony (Part 3 of 4), YouTube.com, 2011, www.youtube.com/watch?v=Gadt8q00810, 00:08:10-00:08:55.
9. Janice Wood, "CAP Volunteer to Be Honored with Distinguished Service Medal," *General Aviation News,* June 10, 2011, https://generalaviationnews.com/2011/06/12/cap-volunteer-to-be-honored-with-distinguished-service-medal/.

COLONEL CHARLES COMPTON COMPOSITE SQUADRON, ILLINOIS WING

ABOVE: Col. Compton with members of his namesake squadron on hits 102nd birthday, June 19, 2018. BELOW: Col. Compton shows off challenge coins presented to him by the CAP national commander and vice commander, Maj. Gen. Mark Smith and Brig. Gen. Edward Phelka.

regularly included him in award ceremonies, shared cake with him each birthday, and were inspired by his rich history.

Erik Lechleitner, cadet commander of the Compton squadron, said Compton had a way of putting timid new cadets at ease. "Compton liked to chat about the future of aviation, especially drone technology. It's just incredible, having conversations with this 101-, 102-, 103-year-old man who keeps up with the most recent technological advancements in aviation."[10]

Col. Compton personifies the volunteer ethos of the Civil Air Patrol. He chased submarines in World War II from the organization's first coastal patrol base. He returned to CAP in the 1960s, and commanded squadrons in Illinois. He was a role model in retirement, and his spirit will continue to inspire through the CAP squadron named after him. ▲

10. Claire Hao, "Charles Compton, Civil Air Patrol Pilot during World War II and Ad Salesman, Dies," *Chicago Tribune*, July 7, 2020, https://www.chicagotribune.com/news/obituaries/ct-charles-compton-obituary-20200707-gavcbio5zja4ncgz4wuskbzb7q-story.html.

Big-picture thinking

A systematic analysis of air doctrine in World War II and the changing attitudes towards area bombing

One-half left rear view from below of formation of Eighth Air Force Boeing B-17 Flying Fortresses in flight, dropping sticks of high explosive bombs over the Dresden, Germany, area, on April 17, 1945.

NATIONAL AIR AND SPACE MUSEUM ARCHIVES

On the eve of the Japanese attack on Pearl Harbor in early December 1941, news of the creation of an all-civilian augmentation force under the leadership of U.S. Army Air Corps officers had barely hit the streets. Other than G. Robb Wilson, and a handful of aviators keen on the decisive role such a force could potentially play in national defense, it is fair to say that not many could have predicted such an egregious act of war that would ensue a week later. The history of the Civil Air Patrol is as much about service and dedication to a cause as that of the armed forces of the day. The shared relationship to the U.S. Army Air Corps and later U.S. Air Force is inexorable— after all, its early leaders came from those organizations and were frankly some of the great pioneers of both aviation, as well as the application of air-power theory in warfare. We as historians should not underestimate the contributions of these individuals, and ought to regard them with high esteem as not just doers, but rather "thinkers" who molded and shaped our post-World War II way of thinking with respect to the decisive role air-power would play in combat as a result of our experiences with it.

The idea that a civilian force of pilots could patrol the North American coast in search of enemy vessels, and potentially target them for destruction proved to be an attractive force multiplier for the war planners who saw every means necessary of defeating an aggressive enemy as being "necessary." The following is an article assessing the efficacy of the strategic bombing campaign directed towards Germany in World War II. The essay addresses some of the moral components of aerial bombing, and provides a platform for dialogue on how such a role reversal came to be, wherein civilian non-combatants were asked to target military combatants during war, and is thus historically relevant to CAP's potential wartime missions.

By Maj. KURT J. EFINGER

With the end of World War I, the re-evaluation of air-power theory had fundamentally begun. Air doctrine as it was, barely emerged from infancy following the "war to end all wars." This fact, however, did not exempt it from strong opinions as to what the future might look like. Douhet would posit much along the lines of Mitchell that air power would play a major role in warfare they were both correct, but not to the extent that it would render infantry and armored divisions obsolete. There was however, a paradigmatic shift that would take place between wars wherein the centers of gravity characterized in WWI by pursuing armies and taking ground between the trenches now focused on breaking the enemy's morale which might very well include targeting the civilian populations. This is in keeping with Douhet, who supported such in an effort to quickly bring an enemy to the point of surrender, and thus avoid greater conflict. The right pressure exerted at the proper point and at the correct time, could produce rather different results and exhaust fewer resources if believed that air-superiority was the answer to the modern war.

"The strategic bombing campaign has long been a subject of intense controversy and may well remain so for years to come. Certainly, the moral issue will be debated as long as morality itself lacks a confirmed definition."

— *Maj. Gen. Haywood S. Hansell Jr., U.S. Air Force*

1930s German Air Doctrine and its Application

By the time German forces marched into Poland Sept. 1, 1939, the Luftwaffe had demonstrated its ability to effectively combine air and ground forces in an assault that overwhelmed Polish defenses in a matter of weeks.[1] The overall unpreparedness of Western Europe in a few short years was eradicated by countermeasures and a revision of policies that in turn, overwhelmed the once predominant German air force. The moral principles guiding Allied air-doctrine also saw a transformation from the outbreak of World War II through August 1945 — changes in opinion that were largely necessitated by circumstances that indicated the conflict could not be fought with the "civility" first envisaged by those fundamentally opposed to the carnality of war culminating with the Allied bombing of Dresden in

1. Williamson Murray, *Strategy for Defeat: The Luftwaffe* 1933-1945 (Montgomery: Air University Press, 1983), 31. In speaking of the German victory over the Polish in the month of September, Dr. Murray states: "Overwhelming German superiority, however, soon told. On the ground for the first time in modern war, the combination of armored mobile formations supported by aircraft proved devastatingly effective."

1945. For all Germany did to prepare for war and initially present as a formidable force to be reckoned with[2], it underestimated the Allied response as well as the duration of the war, and therefore was destined to fail.

From the outset, Germany's opinion on the use of air-power against civilian populations—whether it included strafing or bombing—differed from that of the United States and her allies. The disparity between the two, however, would rapidly diminish with the progression of hostilities in which both the United States and Great Britain became involved.
On the same day that Germany invaded Poland, President Roosevelt appealed to several western European governments including Germany to refrain from targeting civilian populations.[3] In retrospect, there is little reason to believe that Germany would have ever heeded this admonition. Luftwaffe leaders not only ignored the appeal, but revealed an indifference to the idea by deliberately targeting military forces and several populated cities in Poland.[4] Such lack of concern for human life—*in particular those individuals not related to military operations*—had been demonstrated earlier in the Spanish Civil War in which Germany's renowned Condor Legion made its debut.[5] The German Luftwaffe went through a tactical as well as a philosophical transformation during its involvement with the Spanish Nationalists as they had no other experience as a modernized force up until that point.[6] Previous concepts of how air support ought to have been applied were quickly reevaluated; the nature of how the aircraft were employed as well as the degree to which they were effective against enemy forces was demonstrated. Martin van Creveld says of the Spanish Civil War with reference to the Condor Legion:

> This was the first time since 1918 that Luftwaffe personnel had seen any action at all. Commanders, pilots and ground crews gained experience that they, acting as instructors, were later able to pass to others. Every kind of mission was flown...The nature of the ground organization needed to support air warfare was studied in depth; in 1937-38, the legion, alternating between the northwest and the country around Madrid, was already able to display the astonishing capability for the rapid redeployment of its forces that was to serve the Luftwaffe well later on...The experience gained was invaluable.[7]

The Luftwaffe's bombing of the Polish city of Wieluń, for example, was without any definitive military purpose other than to presumably make known the seriousness of Germany's intentions. The attack on Warsaw at least had some military significance, though the fact that it was an occupied city as well seemed not to matter to the Germans.[8] The Allies would learn from the Germans that the targeting of civilian populations was a strong statement to the lengths each would be compelled by the other to go with the hope of exerting pressure on the enemy to capitulate. Any criticism of Germany's position on the issue, or even the Allies eventual practice of targeting population centers, ought to first consider the resistance of both governments to go to such measures. The United States as evidenced by Roosevelt's warning was at first utterly opposed to bringing the war to anything other than military targets of an industrial or commercial advantage to the enemy. It may come as a surprise that the tactics applied by Germany while assisting Franco were contrary to those promoted by the Luftwaffe's

2. Murray, *Strategy for Defeat,* 20. "When Adolf Hitler launched the Wehrmacht against Poland on September 1, 1939, to begin the Second World War, the Luftwaffe was in a considerably better position than it had been the previous fall. The staff and commanders had solved most of the teething problems that had marked a transition into a new generation of aircraft in 1937 and 1938. Air units possessed modern equipment, and anti-aircraft and airborne forces gave the Germans capabilities that other European air forces could not match. In 1939, the Luftwaffe was closer to realizing the potential of the aircraft, while the doctrine of close air support and cooperation with the army placed the German air force in the position to have a decisive impact on the coming battles beside the army's armored forces."
3. [Roosevelt, Franklin D.], *Appeal of President Franklin D. Roosevelt on Aerial Bombardment of Civilian Populations* (Washington D.C., 1939), http://www.presidency.ucsb.edu/ws/?pid=15797 (accessed August 12, 2008).
4. Giulio Douhet, *The Command of the Air,* trans. Dino Ferrari (Washington D.C.: Office of Air Force History, 1983), 20. One may interpret air-power theorist Guilio Douhet's proposed bombing of civilian populations as a prerequisite to engaging forces in land battles with the hopes of turning a "quick" victory. Infantry, artillery and armored forces would not need to engage if the enemy thus surrendered at the thought of being utterly destroyed by air.
5. Richard G. Davis, *Carl A. Spaatz and the Air War in Europe* (Washington, D.C.: Smithsonian Institution Press, 1993), 366.
6. Murray, *Strategy for Defeat,* 15. "For the Luftwaffe, Spain was a helpful testing ground for its aircraft and tactics...the Germans learned invaluable combat lessons in Spain which they quickly absorbed into their doctrine."
7. Martin van Creveld, Steven L. Canby and Kenneth S. Brower, *Air Power and Maneuver Warfare* (Montgomery: Air University Press, 1994), 33.
8. Murray, *Strategy for Defeat,* 30. "...at the conclusion of the Polish campaign, the Luftwaffe launched massive air assaults against military targets in Warsaw. In these raids, the Germans were not adverse to any collateral damage inflicted on the civilian populace."

leadership just a few years prior. In speaking of the 1935 German air force's operation manual—*Die Luftkriegfuehrung*—van Creveld says:

> …the manual was signed by the first chief of staff of the Luftwaffe, Gen Walther Wever. It opened by reasserting the traditional German belief that the enemy's center of gravity lay in his armed forces and that those forces could only be defeated by the combined action of all three services air power was to contribute to victory by attacking military objectives that were quite broadly defined. On the other hand, attacks having as their sole objective the terrorization of the enemy civilian population were explicitly forbidden as being both counterproductive and contrary to the law of war.[9]

Van Creveld asserts that the initial attacks on civilian populations "seem to have been the results of errors in identification or else of individual pilots getting rid of their surplus armament on their way back from missions."10 This is debatable, as civilians were clearly targeted by air groups in Spain, and not so coincidentally, Wolfram von Richthofen —*former Chief of Staff of to the Condor Legion*—was behind the air assault on Warsaw, and anxious to demonstrate just how destructive air-power could be by bringing the city to ruin.11 One could reasonably assume that targeting civilians was considered as part of that effort. Though he may differ in his belief that the Germans were not purposeful in their targeting of civilians, Martin Van Creveld does concede however, with respect to Warsaw, that "only toward the end of the campaign did the Germans, having repeatedly failed to induce the Polish government to lay down its arms, deliberately attack civilian targets on a large scale in order to bring about the city's surrender." [12]

Allied Policy and the Issue of Targeting of Civilians

> The Air Staff was convinced that bombers could provide a quick victory in a war by destroying the enemy's will and capability to make war even before ground forces became heavily involved in the conflict.[13]

According to Col. Thomas Cardwell, this was the prevalent attitude that U.S. planners had towards the use of bombers and air power. Just as submarines in World War I were not the means to an end in achieving naval supremacy, bombers would not end wars before they ostensibly began. Even still, retrospect can do nothing to eradicate the thinking of those who were the architects of US air strategies in WWII. In explaining some of the thinking behind the Air War Plans Division; Plan 1 (AWPD-1), historian Russell Weigley explains:

> AWPD-1 envisioned bombers relying on speed, massed formations, high altitude, their own armament and armor, and simultaneous strikes from many points to be able to penetrate deep into Germany. Its authors believed that such raids intensively bombing the selected target for six months might defeat Germany without need for a surface invasion.[14]

This was at least the general consensus among the Americans with regard to the role bombers would play. Again, strategies and doctrines would change as much as some of those in power wanted them to remain the same. Change was inevitable, if not in some ways immoral.

> The American air planners in AWPD-1 had rejected one major phase of Douhet's proposed employment of air power. They did not favor a general policy of terror bombing of civilian populations. The air planners doubted on the experience of the war that terror bombing would break civilian morale as Douhet and Mitchell had predicted. Throughout the subsequent participation of the United States in the European war, Army Air Forces officers, especially General Spaatz, consistently expressed moral revulsion at the wholesale slaughter of noncombatants which terror bombing of cit-

9. Creveld et al., *Air Power and Maneuver Warfare,* 28.
10. Creveld et al., 39.
11. Murray, *Strategy for Defeat,* 31.
12. Creveld et al., *Air Power and Maneuver Warfare,* 39.
13. Thomas A. Cardwell, *Airland Combat: An Organization for Joint Warfare* (Montgomery: Air University Press, 1992), 13.
14. Russell F. Weigley, *The American Way of War: A History of the United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1977), 337.

> ies obviously entailed. Strategic judgment and morality seemed to point to a common conclusion.[15]

Weigley's assessment of the U.S. approach towards civilian bombing indicates that it was not shaped by any particular experience, but rather what appears to be a relatively strong moral opposition. The British, on the other hand however morally predisposed towards the subject in 1939 formulated war-time doctrine based on having experienced bombing themselves, and therefore, less apt to denounce such actions taken against the Germans. As a point of fact, the British spearheaded plans to carry-out terror bombings against non-military targets. Whether the initial raids over German cities were under the ubiquitous guise of targeting military objectives or not is irrelevant. They translated to terror bombings by virtue of the fact that civilians were calculated as collateral damage just as the Germans had themselves performed in much the same manner when bombing cities in Poland. The German attack on London, for example, was followed by a British attack on Berlin, which included more than just "military" targets. It was in some cases unavoidable, and in others curiously questionable. Hitler's response to the British retaliatory strikes on Berlin: "If they attack our cities, we will rub out their cities from the map." [16] Any concern as to the commitment Britain had to seeing Germany was paid-in-kind for the bombings of London, can be answered by evaluating the reasons for having placed Sir Arthur Harris in a position of command over the bombers. He was without compunctions when it came to coordinating efforts to see that Germany was brought to a point of submission his plans specifically called for the bombing of civilians as part of the strategy.

It was a case where everything directed at Germany culminated in the disintegration of the nation's ability to continue fighting.

> Churchill was by no means without misgivings about terror bombing; but his somewhat sinister scientific adviser Lord Cherwell favored it, and together Churchill and Cherwell gave a rather free hand to its foremost apostle in the RAF, Air Chief Marshal Sir Arthur Harris, after February 22, 1942, the head of the Bomber Command Harris's elevation to the leadership of Bomber Command followed immediately after and coincided in purpose with a directive to the command on February 14 to open a new offensive aimed primarily at the homes of the German people. Cherwell argued in April that this campaign, striking Germany's fifty-eight largest cities, would render one-third of the German population homeless within fifteen months and that there was no better way to break their spirit.[17]

It is not so much a question of whether or not the German will was broken; it was rather a case where everything that was directed at Germany ultimately had an effect, culminating in the disintegration of Germany's ability to continue the fight; the eventuality of Germany's surrender as opposed to the immediate concerns of stopping her ability to persist. One may see the entire economic infrastructure of Germany as a center of gravity, or the collective morale as such regardless, the combined efforts to collapse the industrial quarters while at the same time "punishing" Germans for having created another war was more likely than not accomplished in reflecting on six years of war. Germany was in ruins after the war and divided among the Allied powers perhaps enough of a reminder that they ought not try for a third chance at dominating Europe.

15. Weigley, *The American Way of War,* 354.
16. Weigley, 354.
17. Weigley, 355.

Dresden 1945 and "Terror Bombing"

The great debate will always be how effective the Allied *area bombing* was in breaking the German morale, or whether it was an act of "international terrorism" on the part of the Allied powers as Manuel Davenport believes in reference to the bombing of Dresden in 1945.[18] Nonetheless, the destruction heaped upon German cities such as Dresden, attests to the ends to which allied air commanders would go in destroying all that they could of the German infrastructure and morale. Not all commanders supported the strategies employed against Germany and Maj. Gen. Laurence Kuter even went so far as to question Gen. Carl Spaatz on the decisive nature of *Combined Chiefs of Staff* (CCS) *Directive No. 3,* and whether it was not in effect "an official authorization to begin indiscriminate American bombing of population centres" according to McKee. [19] Gen. Kuter was largely concerned with limiting targets to daytime raids and only those of military significance. According to Davenport, he was not only at odds with General Spaatz, but the British commanders as well—RAF Commander Sir Arthur Harris, and Chief of Air Staff, Sir Charles Portal regarding the execution of area bombing. As much as he was vocal about his disdain for certain aspects or logistics of area bombing, Gen. Kuter was equally supportive of engaging in "precision bombing" for both tactical and moral reasons." [20]

The long-term analysis of strategic bombing would indicate that Germany was defeated as a result in part by the persistent and deliberate bombing of cities with some link to military operations. Whether hindsight condemns or exonerates those who made the tactical decisions, is secondary to the simple fact that Germany finally surrendered, and the pressure applied to the economic "center of gravity" was realized in the infrastructures supported by the cities. Dresden was but one symptom of a war where things were not so neatly wrapped in a package with morality and civility keeping it all tied together.

Britain's Motivation

The British had many reasons to endorse "terror campaigns" against their German cousins, but it was not an official objective nor was it necessarily anything more than the name given by those detractors and armchair critics who had only to sit back and evaluate the situation from newsrooms and golf courses while enjoying a certain absolution from responsibility. Phillip Meilinger's constructive criticism of the role played by the British is tempered and logical in particular when considering the fact that Britain stood largely alone until the United States was forced to officially join in the war against Germany and Japan.

> ...the British army had been thrown off the continent at Dunkirk leaving its heavy machinery behind; Axis forces were moving rapidly across North Africa; German submarines were sinking British shipping in the Atlantic at an alarming pace; London was suffering through the blitz; and British bombers had suffered such heavy losses in daylight that they had been driven to the relative safety of the night. In short, Britain was alone, outnumbered, outgunned, and desperate The choice of Arthur Harris to lead Bomber Command in this dark period was pivotal Harris initiated an urban bombing campaign against Germany's major cities, aiming to destroy German morale by targeting residential areas where the workers lived.[21]

Meilinger says of the changing attitudes and climate leading up to the full-scale practice of area bombing of the cities that, "There is a tendency to read the history of Bomber Command in WWII backwards

18. Manuel M. Davenport, *The Leader's Imperative: Ethics, Integrity and Responsibility*, ed. J. Carl Ficcarotta (West Lafayette: Purdue University Press, 2001), 142-147. Dr. Davenport is among those who clearly see the 1945 Allied bombing of Dresden as "case of international terrorism," and reaches the conclusion based on "detailed information recently available," although, he does not condemn the act as either reprehensible, or unethical—rather he says that US conduct in WWII was in fact ethical. This is a more pragmatic, and tempered view of Dresden than that offered by Alexander McKee. General Kuter who was very-much opposed to the way in which "area bombing" was being carried-out, was placated by assurances that civilians would be given the greatest consideration. Kuter himself was committed to only going after specifically recognized military targets, and in the end, was not so far removed from the goals of Harris.

19. Alexander McKee, *Dresden 1945: The Devil's Tinderbox* (New York: Souvenir Press Ltd, 2000), 105.

20. Davenport, *The Leader's Imperative,* 143.

21. Phillip Meilinger, *The Paths of Heaven: The Evolution of Air Power Theory*, ed. Col. Phillip S. Meilinger (Montgomery: Air University Press, 1997), 71.

from Dresden in 1945 to Hugh Trenchard in 1919."[22] There is little accounting for the logistical quagmires that Britain and her allies faced in attempting to sever all lines of communication and transportation. Germany had centers of command and control nestled within cities knowing that there would be no small amount of public outrage over the bombing of major cities especially ones of historical significance. The criticism leveled at Britain seldom took into account the nature of the war Germany waged against the island nation for nearly a year. The destruction left by German rockets was quickly forgotten as the British began to retaliate as best they could with peripheral support from the Americans and displaced French fighters. The German bombing of Britain, or "London blitz" was impetus enough for people—*at least Londoner's*—to overlook any aggressive campaigns the British would take against Germany.

> The British, victims of heavy German bombing, adopted a policy of city-area bombing early in the conflict in the course of the war, the Luftwaffe, V weapons, and long-range guns killed more than 60,000 British civilians. The bombing "blitz" of 1940-41 alone killed 43, 000 and wounded 139,000. Many persons in and out of government not only wanted to give back as much as they had gotten but instead wanted to give back more. Some clerics and individuals with exceptionally forgiving and discriminating consciences opposed area bombing on ethical and humanitarian grounds American policy towards collateral damage and area bombing lacked the clear and concise definition of British policy and procedure.[23]

There's no reason to assume that the British would be too forgiving of the Germans after only twenty years separating two wars, the slaughter at Dunkirk, and the unfettered German "blitz" against London and surrounding areas in 1940-41. Philosophically, they would go through changes that would not have been immediately apparent to the Americans joining in the fray. It is the kind of transformation that occurs when emotions and experience take precedence and shape policy accordingly. It is the very sort of thing that also took Americans from a place of relative isolationism on Dec. 6, 1941, and the very next day mobilized them to call for war against Japan.

External Assessments and the Facts

> Ever since the American economist John Galbraith as a matter of "intellectual honesty" revealed in 1945 that the bombing of Germany had accelerated rather than reduced production, the Anglo-American bomber offensive has been regarded as a flawed campaign These were provocative claims, but they have solidified since the war into historical orthodoxy. The bombing of Germany has generally been regarded as a waste of strategic effort.[24]

Richard Overy only highlights some of the criticism that the Allied powers have received as a result of propaganda, and hastily prepared assessments of the strategic Bombing Survey of which Galbraith was a senior official.[25] The fact remains that the directives given to the bombers called for civilian areas to be targeted not necessarily as an individual act of war, but rather as a coincident operation with the military targets as the primary objective. The bombing of civilians would become the "unintended consequences" of war. No matter how it might be construed, the idea of intentionally targeting civilians was repugnant at the highest levels with few exceptions, though the latitude for interpreting directives was a shady area that seems to have guided mission commanders on an individual and conscionable level at times.[26] Even meddling with the Casablanca "Directive," was still not a cause to advocate civilian bombing regardless of the changes that had been made.[27]

22. Meilinger, *The Paths of Heaven,* 71.
23. Richard G. Davis, *Bombing the European Axis Powers: A Historical Digest of the Combined Bomber Offensive, 1939-1945* (Montgomery: Air University Press, 2006), 448-449.
24. Richard J. Overy, *The War in the Air, 1914-1994,* ed. Alan Stephens (Montgomery: Air University Press, 2001), 107.
25. Overy, *War in the Air,* 108.
26. Meilinger, *Paths of Heaven,* 68-69. Meilinger does not specifically state this as fact, but rather alludes to the ambiguity with which the directives were written. The question of course was what exactly constituted a "military target."
27. Haywood S. Hansell, T*he Strategic Air War Against Germany and Japan: A Memoir* (Washington D.C.: Office of Air Force History, 1986), 77. Neither the AWPD-1, AWPD-42, or any revision to any directive named civilians as a target in and of themselves outside of the expectations that there would be occasions where they were lost to Allied sorties. However, the implication was there from the beginning.

Curiously, the larger disagreements between the Allies centered on the application of air power, and how the bombing raids would be carried out respectively. The fundamental difference between the British and American approach to bombing was more of an operational matter, and one where the Americans sought to specifically engage in daylight targeting. The British were skeptical—*as well as fearful*—of sending bombers into Germany for daylight raids as the "RAF had concluded that bombers lacked the speed and maneuverability to fend off enemy interceptors by daylight and that no feasible amount of defensive armament could compensate for their disadvantages."28 The Americans appeared to have more concerns about reaching and eliminating the military targets, and were willing to take the risk in order to avoid hitting anything but "vital parts of Germany's war machine," according to Gen. Arnold.[29]

Disagreements between the Allies centered on the application of air power, and how bombing raids would be carried out.

Hansell and others have articulated that the philosophical differences between the Americans and British were more than just simple disagreements, but rather strong opinions revealing strained emotions on the matter of daylight v. night bombing. Ultimately, the Americans would prevail in convincing Churchill that it could be done, and it would not only be advantageous, but necessary in order for the bombing to be of strategic, and material value.[30] Ironically, the American Eighth Air Force would lose fewer bombers than the British during daylight raids on Germany.[31]

According to Overy, and in spite of Galbraith's hastily uttered criticism of the overall bombing, the results were positive:

> Almost all the senior German officials interrogated at the end of the war agreed that the systematic disruption of traffic by bombing was the critical factor in the collapse of the industrial economy from September 1944 The collapse of the rail network split Germany into smaller economic regions which were unable to support armaments production bombing made it impossible to support a serious economic war effort. Its effects were, according to one senior German official, "catastrophic" The effects on German morale were equally debilitating. Although bombing did not produce a popular uprising against the German government, nor the complete collapse of war-willingness, all the evidence suggests that the experience of bombing was uniquely demoralizing. [32]

This is in keeping with the final analysis of the United States Strategic Bombing Survey of Europe which evidently did not reflect Galbraith's larger criticism that the entire several years of persistent operations against Germany was of no consequence.

Conclusion

The Allies were dubious of Germany's commitment to avoid civilian casualties. There was more than enough evidence to suggest that Germany was indifferent towards the rules of war established by powers they chose not to recognize. With the circumventing of the Treaty of Versailles, they

28. Weigley, *The American Way of War,* 336.
29. Weigley, 337.
30. Hansell, *A Memoir,* 69-71 and 72-77. Every source examined comes to the consensus that Maj. Gen. Ira Eaker was the pivotal officer who was able to convince the British that they would be successful in daylight bombing. Eaker's friend, Sir John Slessor, British Vice Air Marshall was also instrumental in moving towards an agreement which eventually found itself drafted in the Casablanca Directive.
31. Meilinger, *Paths of Heaven*, 253.
32. Overy, *War in the Air,* 117.

clearly snubbed their noses at the conditions placed on rearmament and what nature of military they were allowed to create.

The Condor Legion's exposure to air combat and close ground support was an invaluable tool that the Germans carried with them into the invasion of Poland on Sept. 1, 1939. Even though they miscalculated the duration of the war, and were not equipped to carry-out the same air-strategies as the Allied powers, Germany sustained a formidable war machine from September 1939 through May 1945. The air doctrine applied by Germany and the force used wantonly against Britain would come back to haunt them. They set the tone for how the Allies would ultimately respond, and how the world would perceive them when all was said and done. The British pulled out as many stops as was practicable; not only to eliminate any chance of Germany again bringing the war to the British Isles, but discreetly to direct campaigns of a punitive nature against population centers in Germany. They had learned from the Germans that centers of gravity could extend well beyond the purely tangible military objectives to include the more oblique psychological effect of reducing morale to the point of either surrender or insurrection. In spite of the fact that neither transpired in Germany, the economic losses were staggering, and directly contributed to the collapse of Nazi Germany and the will of the people to fight.

Finally, there is no evidence pointing to the American bombing of Dresden as being a "dog and pony" show for the Russians. It disrupted the line of communications as well as flow of materiel from in and out of the city to areas where it was used against the Allies. As to whether or not the raid was "excessive," the decisions made at the time were more or less to eliminate the potential for Dresden to serve as a means to supply German troops in the field. There is no evidence to the contrary, though the bombings were undoubtedly horrific in Dresden as much as they were in Hamburg and Leipzig.

In the final analysis, the Americans and British were able to put aside philosophical differences, work together, and engage the Germans on the only level that worked to frustrate and destroy the will of the people and economy that fed the Third Reich. The sustained bombing was horrific, but even so, it alone did not win the war, and air doctrine was subsequently put to the test in two other major conflicts before the end of the 20th century in which bombing played a major role in attempting to break the will of the enemy. There was perhaps more success in Europe during World War II, than Korea or Vietnam. Nonetheless, pressure applied accordingly and steadily was the remedy that the Allied commanders needed to use against Germany in order to win the war. With that in mind, the willingness to compromise and lay aside individual moral convictions had to take precedence in order for the larger picture of a German surrender to take place in the end. Future conflicts may well regard such cooperation with contempt as the world is trending towards the development of independent technologies that speak less to the importance of strategic alliances meant to promote stability, and more to the self-preservation of the state. ▲

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The Americans and British put aside philosophical differences to work together and engage the Germans in a way that destroyed the will of the Third Reich.

Grandpa's shotgun and the Army Air Forces

Skeet Shooting in World War II Flexible Gunnery Training

1942 National Skeet Champions at Tyndall Field, Fla.

U.S. AIR FORCE

By Maj. MARC R. HENDERSON

This study spotlights the sport of clay pigeon shooting (shooting shotguns at clay targets) and its use by the U.S. Army Air Forces (AAF) in its flexible gunnery training to prepare aerial gunners during World War II. In the interwar period, largely due to military drawdowns and a lack of funding, the AAF generally left a great deal of training to the discretion of commanders at the local level. By the late-1930s, the increase in American production of aircraft for the war in Europe foreshadowed America's entry in WWII, which forced the expansion of the U.S. military writ large. Consequently, the AAF created a Training Command and formal training programs to accommodate the ever-growing pipeline of volunteers and draftees. Though the AAF provided commanders of formal training programs great lea way to use innovative methods for training, it eventually evaluated all training programs, and standardized curriculum that worked. The AAF incorporated the skills associated with clay pigeon shooting to its curriculum at all flexible gunnery schoolhouses.

Competitive clay pigeon shooting originated, in part, as a method for practicing bird hunting. The sport was, and continues to be, generally divided into three major disciplines, including trap, skeet, and sporting clays. In trap shooting, competitors shoot targets launched from a single "house" or machine, generally away from the shooter. In skeet shooting, competitors shoot at targets launched from two houses in somewhat sideways paths that intersect in front of the shooter. Sporting clays includes a more complex course, with many launch points.

To hit a moving airborne target by leading it, or aiming a gun ahead of that target, so that a fired projectile will intersect and collide with the moving target is not intuitive. Fortunately, the AAF was able to enlist a pool of flexible gunnery instructors from the ranks of the National Skeet Shooting Association. Champion skeet shooters had perfected the art of hitting targets moving aloft, and the AAF called upon them to teach fliers to do the same.

The increased demand for trained gunners also necessitated the need for a large stock of guns for training, which included shotguns. As American industry tooled itself for war and largely away from sport shooting, it produced military rifles and machineguns in lieu of hunting and sport rifles or shotguns. To support the unorthodox military training run by former sport-shooters, the American homefront answered the U.S. military's calls for aide by donating their personal shotguns to the government.

Flexible Gunnery Training

Flexible gunnery is the name given to describe weapons on aircraft, usually machine guns positioned in a turret or other type of swivel mount, movable in both horizontal and vertical planes.1 Nearly all of the WWII-era bombers (B-17s, B-18s, B-24s B-25s, and B-26s) had one or more gun turrets, but hand-held guns equipped with crude iron ring-and-post sights, predominated.[2]

As the AAF ramped up for war, it deemed flexible gunnery training a necessary part of its training pipelines for all aircrew, except pilots. Copilots, navigators, bombardiers, radio operators, radio mechanics, crew chiefs, armament specialists, armament personnel, turret and gunsight maintenance men, and non-specialist flying airmen were all expected to train in the art and science of flexible gunnery. The training command quickly realized it was unable to train all personnel destined to fill those AAF roles, and it had to prioritize flexible gunnery training to produce combat gunners.[3]

By 1944, the height of flexible gunnery training, the AAF had established seven primary locations across the country to produce graduates of flexible gunnery training. Las Vegas Field, Nevada; Harlingen Field, Texas; and Tyndall Field near Panama City in Florida began training and producing graduates shortly after the U.S. entered the war in December

1. Rebecca Hancock Cameron, "Not Just a Pilot's War: Individual Training of Navigators, Bombardiers, and Gunners," in Training to Fly: Military Flight Training, 1907-1945 (Washington, DC: Air Force History and Museums Programs, 1999), pp. 421-450, 438.
2. Nicholas Hobbs, ed., Army Air Forces Aviation Psychology Program Research Reports, Psychological Research on Flexible Gunnery Training, Report 11 (Randolph Field, TX, 1946), 2.
3. Cameron, "Not Just a Pilot's War," pp. 421-450, 438.

U.S. AIR FORCE

Near the end of their training, gunnery students practice firing from gun turrets mounted on trucks. Instructors modified these turrets to fire shotgun shells. Flexible gunnery training caused the Army Air Forces more difficulties than any other flying specialty. The Army Air Forces had virtually no background experience in gunnery instruction. Compounding the problem were serious shortages in equipment and instructors, and no practical means of simulating aerial combat firing.

1941. Other flexible gunnery school locations came online as soon as they were able, including Yuma Army Air Field and Kingman Field in Arizona; in Florida at Buckingham Field in Fort Myers; and at Laredo Field, Texas.[4]

Innovations in Flexible Gunnery Training

For the first several years it was up to schoolhouse commanders to be creative in teaching their students the craft of aerial gunnery. The Director of Military Requirements, Brig. Gen. Muir S. Fairchild warned base commanders "not to pester higher headquarters for more facilities... Training units would have to fall back on their own resources: 'Ingenuity, perseverance, and forceful action, that obtains results must be substituted for requisitions letters reporting inability to accomplish objectives."[5] It wasn't until late in 1944 that flexible gunnery training facilities began seeing improvements in dedicated training resources.[6]

Consequently, trainees attending flexible gunnery schools in their early days had much to desire. The training command left much of the curriculum to the ingenuity of creative instructors, who had little precedent and no organized body of knowledge to guide them. Lesson plans, on the machine gun were based on infantry manuals, aircraft recognition courses were based on British materials, instructors designed turret courses from texts supplied by turret manufacturers, and no adequate sighting course existed. There was insufficient equipment, too. When available for training .30 caliber machine guns were often substituted for the newer, but scarce .50 caliber guns the AAF was sending forward for actual fighting – guns the students would go on to

4. Cameron, "Not Just a Pilot's War," in Training to Fly, 438.
5. Memo, Col L. S. Smith, Dir Indiv Tng, to Comdg Gen Air Forces Flying Tng Comd, Sep 24, 1942, Subj: Request for gunnery Trainees, Box 528, 353.9, AAG, RG 18, Nat'l Archives, cited by Cameron, "Not Just a Pilot's War," in Training to Fly, 438.
6. Thomas A. Manning, *History of Air Education and Training Command, 1942-2002* (Randolph Air Force Base, TX: Office of History and Research, Headquarters, Air Education and Training Command, 2005), 27.

(1-D)

March 10, 1940

Assignment of Selectee, Robert E. Henderson.

The Adjutant General.

1. Information has reached this office that Mr. Robert E. Henderson of 163 West Emerson Street, Melrose, Massachusetts, is to be inducted into the military service sometime during March, 1942.

2. Mr. Henderson is a well-known skeet shot and an authority in shooting and shotguns. These qualifications make him especially valuable to the Air Forces as an instructor in skeet shooting and aerial gunnery.

3. It is recommended that, when inducted, he be assigned to the Air Forces for original assignment to the Air Corps Gunnery School, Panama City, Florida.

4. The Commanding Officer, Air Corps Gunnery School, Panama City, Florida, will be responsible for his basic military training.

For the Commanding General:

J. M. [illegible]
Lt. Col., Air Corps
Director of Personnel

OFFICIAL:

T. M. BELSHE
Captain, Air Corps
Acting Asst. Air Adjutant

Copy for Mr. Robert E. Henderson

AUTHOR'S PHOTO

When this skeet shooting champion enlisted in 1940, the Director of Air Corps Personnel assigned him to become an instructor at the Air Corps Gunnery School in Panama City, Fla., before he was even inducted.

actually use in combat. Each school had only a few turrets to use for demonstration purposes.[7]

School commanders filled gaps in training with almost any kind of activity, particularly shooting, which might teach a gunner something that would help him handle a gun in combat. The first moving target range for machine gun firing consisted of a cloth target mounted on a sled that instructors tied to a truck towed across the desert using a long rope, at which students would fire. Some schools had students fire at stationary targets from the back of moving jeeps. For a time, flexible gunnery training included amusement parks games; students fired simulated machineguns at photoelectric cells mounted on airplanes in a shooting parlor, and compressed air guns shot BBs or small pellets developed for indoor ranges, and training command supported an attempt to quickly develop a .22 caliber machine gun for outdoor firing.[8]

The AAF recognized the merits of sport shooting for training would-be gunners. An exposé of the training in a 1942 issue of the sportsman's magazine Outdoor Life claimed, "Shotgun shooting is like air gunnery shooting in miniature. The fast-flying clay targets are small and slower than an airplane, and the range is shorter in proportion. It is because trap and skeet shooting inculcate in student air gunners the habits of swing, lead, and follow-through that these shotgun specialists are being used so extensively in training them for combat."[9] To recruit qualified instructors the AAF and the Navy drew "heavily on competitive skeet shooting for know-how shotgun instructors."

Arsenal

At a peak in September 1944, the AAF Training Command graduated more than 3,500 gunners each week.[10] To equip its flexible gunnery programs the War Department purchased every shotgun available on the market, then turned to the public for support. In a call for assistance titled "Your Shotgun Called to War; Army Air Corps Wants to Buy Your Pet 12-Gage Blunderbuss," *The Boston Herald* reported, "This is a serious and clarion call, especially to skeet clubs and trap shooting clubs throughout the United States. They are asked by the Army to get behind their members and urge them to make this sportsman's sacrifice in order that our kids in the sky may be better prepared to save their own lives..."[11] In similar newspapers across the country the AAF asked sportsmen to mail the details of their shotguns to their regional offices and suggest a fair price for their shotgun(s). The program worked. The Army inspected those weapons in which it was interested, and either paid for the shotgun(s) or mailed sub-standard shotguns back their owner(s).

Flexible Gunnery Training

Early lessons included familiarizing students with a variety of weapons. A large proportion of student gunners had never handled a firearm prior to attending gunnery school, and it was not uncommon for some students to be gun-shy, so every effort was made by instructors to build the student's confidence with weapons. Gunnery school administrators believed shooting at stationary targets by would-be air gunners was "a waste of time," so their introduction to shooting was with BB machine guns fired on a range at moving model airplanes operated on wires. They then, fired .22 caliber machineguns at larger slow-moving targets at longer ranges.[12]

With preliminary experience in firing at slow-moving targets, the student gunners' "real" air gunnery education began on the skeet range, where students learned to shoot at fast flying targets with 12 gauge standard trap and skeet guns. Their first lessons were in trap shooting, which gave them practice in firing at targets going away from them at angles up to 90 degrees. They then progressed to skeet shooting to practice firing from eight different stations at targets, flying both away from them and toward them at almost every angle.[13]

7. Hobbs, *Psychological Research on Flexible Gunnery Training,* 3.
8. Hobbs, *Psychological Research on Flexible Gunnery Training,* 3.
9. Francis A. Marvin Jr., "How Crack Skeet Shots Are Training Our Air Fighters," *Outdoor Life*, July 1942, 11.
10. Cameron, "Not Just a Pilot's War," in Training to Fly, 438.
11. Bill Cunningham, "Your Shotgun Called to War; Army Air Corps Wants to Buy Your Pet 12-Gage Blunderbuss," *The Boston Herald*, (n.d.), 11.
12. Francis A. Marvin Jr., "How Crack Skeet Shots Are Training Our Air Fighters," *Outdoor Life*, July 1942, pp. 12-13.
13. Marvin, "How Crack Skeet Shots Are Training Our Air Fighters," 13.

OUTDOOR LIFE PHOTOS

LEFT: Before handling shotguns, students gained confidence in shooting this moving target attached to a driverless Jeep at Tyndall Field, Fla.,in 1942. BELOW: Trap and skeet champion, Corporal G.J. Powell, shows a group of aircrewmen how to handle a shotgun.

Instructors emphasized correct shooting stance, smooth gun handling, and safety precautions. They watched closely for any indication of flinching, and helped students overcome any fears or discomfort. One of the most common challenges for instructors was to induce students to shoot with both eyes open – a most-important skill for an air gunner – "for an air-gunner who closes one eye when aiming a machinegun in combat, sacrifices half of his ability to estimate accurately speeds and relative courses through the air. Instructors coached students to swing on and past their target, to press the trigger without breaking or checking his swing..., and to follow through."[14]

Shooting at the clay targets flung from various angles and heights were a good introduction to the tracking and leading a moving target, but was not without consequences. Firing shotguns all day left the gunners' arms feeling battered from the shoulder to the elbow. A 93rd Bomb Group gunner remembered, "We learned to shoot right-handed, left-handed and any other way imaginable. I had both shoulders stuffed with towels, they were so sore and black and blue."[15]

The Army's systems of training and coaching got quick results. The average first skeet score of men with no previous shotgun experience was 10 out of 25, and after four hours of trap, and 25 hours of skeet instruction and practice, the same men averaged 17 out of 25. Men who had prior bird shooting experience performed considerably better.[16] Instructor skills benefitted, too. At least one instructor went on to break 748-straight clay skeet targets in registered competitions – without a miss!

Student gunners then trained to fire a shotgun equipped with machinegun handles and sights pivot-mounted on a truck at targets thrown from roadside traps while the truck moved at thirty-miles-per-hour. AAF training administrators considered this training to be so difficult that good skeet shots averaged only 11 at it, and they graded it on a curve. Gunnery schools rated a score of 18 as equal to that of a perfect 25-straight at skeet.

After finishing the various phases of shotgun training, students advanced to firing actual machine guns, the .30 caliber and .50 caliber machine guns, first at slowly moving ground targets, and then at sleeve targets towed by airplanes. Then, after instruction and practice in the operation of power-driven turrets mounted on trucks, they concluded their five-week course by firing from planes at targets towed by other planes. The climax of their training was an air-to-air night firing.[17]

PUBLIC DOMAIN

AAF gunner with a training weapon, a Browning Auto-5 or Remington Model 11 12-guage shotgun set up to emulate a flexible-mount .50 caliber M2 Browning. The rear sight is not visible, but note the elevated front sight, the M2 spade grips, and the pintle-mounted chassis that the gun is set into. Shotguns and thrown targets were used to train aerial gunners on things like leading that were not relevant to the infantry.[17]

The graduates received diplomas and their coveted silver U.S. Army Air Forces wings. Privates, Technicians, and Corporals received promotions to the rank of sergeant; an incentive offered to encourage volunteerism. Some graduates also received the arms qualifications badges their

14. Marvin, "How Crack Skeet Shots Are Training Our Air Fighters," 13.
15. Kelsey McMillan, "Aerial Gunner Training," no. 7, (Bomber Legends, n.d.), 13, www.b17museum.ch. 13.
16. Marvin, "How Crack Skeet Shots Are Training Our Air Fighters," 13.
17. Marvin, "How Crack Skeet Shots Are Training Our Air Fighters," 13.

qualification scores merited: Expert Aerial Gunner, Aerial Sharpshooter, or Aerial Marksman. Upon graduation from flexible gunnery school the new aerial gunners attended combat crew training school. There they met the other gunners and officers of their new crew, and they spent three months flying practice missions and maintaining their gunnery skills at peak levels.[18]

More than 297,000 officers and men graduated from gunnery schools during the war – a total larger than that of any other Air Force specialty except aircraft maintenance.[19] Aerial gunners fought in all theaters, fired more than 227 million rounds of ammunition on more than one million combat sorties, and destroyed in excess of 15,000 enemy aircraft.[20] For most air-gunners the arts of their trade were learned and honed on the AAF's skeet ranges.

Born from the realization that airborne gunners were needed for the defense of aircraft as America prepared to enter World War II, until the technological extinction of their necessity with the advent of the jet age, pressurized cabins, and remote gunnery positions – the Army Air Forces only emphasized flexible gunnery training from 1941–46. It was altogether eliminated by 1948.

Conclusion

To prepare its airmen for combat in World War II the U.S. Army Air Forces trained and qualified thousands of aircrews. The AAF gave its Air Training Command the unprecedented task of creating formal training programs, including aerial gunnery, to teach those aircrews to defend themselves from enemy aerial attack, but asked the school commanders to create curriculum and develop training aides and exercises with limited and often self-supplied resources. With a relatively small air-arm leading into WWII, the AAF's need for aerial gunner's was seemingly an afterthought. The AAF recruited champion shots to form a cadre of flexible gunnery instructors, and when purchasing every shotgun on the market was not enough, it asked a supportive public for their family shotguns. ▲

PUBLIC DOMAIN

At one time or another, most of the flexible gunnery schools had a skeet range tower, a multi-level wooden structure with platforms at 10, 20 and 30 feet, from which the gunners shot at clay targets. The purpose of shooting from the varying heights was to simulate the high and low angles of the aircraft gun positions relative to enemy aircraft.

18. McMillan, "Aerial Gunner Training," pp. 24-25.
19. Wesley Frank Craven and James Lea Cate, eds., *Men and Planes, The Army Air Forces in World War II*, New imprint (Washington, DC: Office of Air Force History, 1983), 590-1 in Cameron, "Not Just a Pilot's War," in Training to Fly, 438-9; and McMillan, "Aerial Gunner Training," 25.
20. McMillan, "Aerial Gunner Training," 25.

Chappie James, left, with his mentor, Charles A. "Chief" Anderson, right, at Otis Air Force Base, Mass., in 1955. James's son, Daniel James III stands behind the cockpit.

Remembering 'Chappie' James

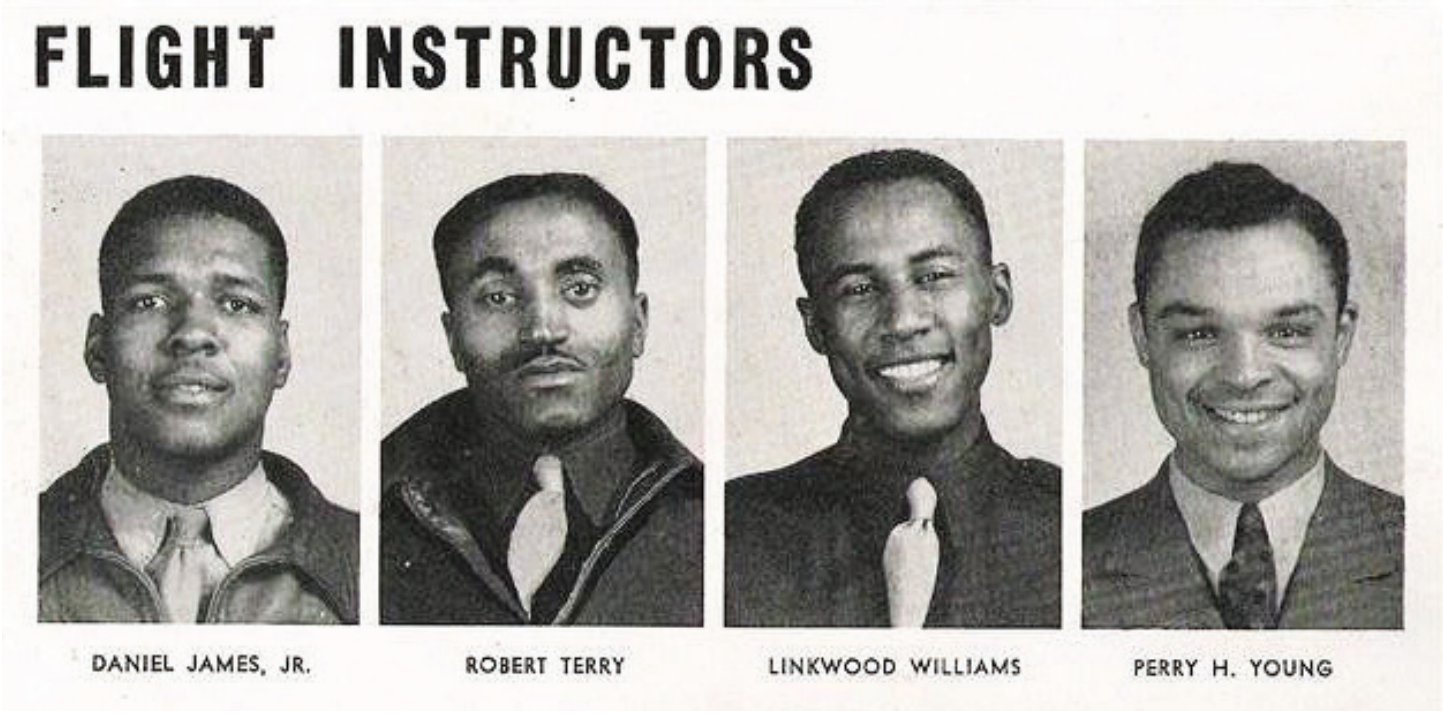
By Maj. MARC R. HENDERSON
and Capt. NIKOLY ZHEREBNENKOV

Gen. Daniel "Chappie" James Jr. was the U.S. Air Force's first African American four-star general. Born 101 years ago in Pensacola, Fla., February 11, 1920. Raised by a mother that cherished education, he learned to fly before World War II, was pilot instructor for the Tuskegee Airmen, and flew combat missions in Korea and Vietnam. He once faced down Libyan dictator Muammar Gaddafi. James was a living model of social progress and symbolized the final end of authorized racial discrimination in the ranks. He devoted his life to the Air Force and its ideals and passed away just three weeks after his military retirement in February 1978.

In an interview to acknowledge the 100th anniversary of Chappie's birth, his youngest son, Claude, credited his father's success to the educational start he and other black kids in the Pensacola neighborhood got at his mother Lillie's school. "She took it on herself to get them ready, all the way up into high school, to where they could handle it and they could achieve more," Claude James said. "And, a lot of those kids went to college and a lot of them reached a lot of heights that they wouldn't have even got a chance to do because they had a good start."[1]

Daniel James Jr. was the last of his parents' 17 children. His father worked hard at a good job for the local gas company. His mother was unimpressed with the quality of the segregated public school

1. Sandra Averhart, "On His 100th Birthday, 'Chappie' James' Legacy Lives On ," WUWF 88.1 NPR for Florida's Great Northwest (National Public Radio, February 11, 2011), https://www.wuwf.org/post/gala-marks-chappie-james-100th-birthday.



HAMPTON UNIVERSITY

James pictured alongside fellow flight instructors of the Tuskegee Army Flying School - 66th Army Air Forces Flight Training Detachment at Motion Field, Tuskegee, Ala., in 1942.

he would have attended as a youngster, so she started her own. It gradually attracted other neighborhood children. She ran the Lillie A. James School in Pensacola for 52 years, until she died at age 82.[2]

As a youth, James inherited a lifelong nickname, "Chappie", from his older brother Charles, a star Florida A&M halfback. At the time "Chappie" was a common nickname for "Charles." The younger Chappie was also a gridiron standout. Big enough to play tackle, he earned a football scholarship to Tuskegee Institute in Alabama.[3]

In 1938, President Franklin Roosevelt signed the Civil Aeronautics Act of 1938 that created the Civil Aeronautics Authority and provided funding for the Civilian Pilot Training Program to train civilian pilots. Daniel "Chappie" James Jr. was one of 435,165 pilots that trained in the program preceding and during World War II.[4] In 1942, with the nation already at war, he graduated from Tuskegee with a bachelor of science degree in physical education and a civilian pilot certification. He stayed on at Tuskegee as a flight instructor, entering the Army Air Corps Aviation Cadet program in January 1943.[5] He accepted a commission as second lieutenant in the Army Air Forces the following July and, as a Tuskegee airman, he continued to instruct pilots destined to fill the ranks of the Army Air Corps' segregated fighter and bombers squadrons withing the 332nd Expeditionary Operations Group and 477th Bombardment Group.

Although he saw no combat service in World War II, he did train many of the pilots who did, known as Tuskegee airmen. After the war, he transferred to the U.S. Air Force when it became a separate branch of service in 1947. He gained additional experience flying the P-47 Thunderbolt, which the Air Force used as a spotter plane.

In the United States for his second postwar period,

2. Peter Grier, "The Chappie James Way," Air Force Magazine (U.S. Air Force , August 30, 2018), https://www.airforcemag.com/article/the-chappie-james-way/.
3. Peter Grier, "The Chappie James Way," Air Force Magazine (U.S. Air Force , August 30, 2018), https://www.airforcemag.com/article/the-chappie-james-way/.
4. "The Civilian Pilot Training Program," The Tuskegee Airmen, accessed November 27, 2020, https://tuskegeeairmeninthesky.weebly.com/the-civilian-pilot-training-program.html. The CPTP was revolutionary in that the movement produced the legendary Tuskegee Airmen; however, training was still segregated during World War II.
5. Grier, "The Chappie James Way."

Chappie James, in Thailand during the Vietnam War, stands on a flight line of F-4 Phantoms.

Chappie rapidly progressed up the Air Force ranks. The Air Force promoted James in 1952 to the rank of major, and by 1953 he was a squadron commander. He graduated Air Command and Staff College as a lieutenant colonel in 1957, then did a staff officer stint at Air Force headquarters in Washington in the office of the Deputy Chief of Staff for Operations, and then onto European service at RAF Bentwaters, England. In the early '60s he was deputy commander for operations at Davis-Monthan Air Force Base in Arizona with the 4453rd Combat Crew Training Wing.[6]

He earned the rank of colonel just before departing for Southeast Asia. At Ubon Royal Thai Air Force Base, Thailand, in December 1966, his initial assignment was as deputy commander for operations, 8th Tactical Fighter Wing, and in June 1967 he became wing vice commander to three-time ace Col. Robin Olds. He flew 78 combat missions into North Vietnam, many in the Hanoi/Haiphong area, and led a flight into the infamous Operation Bolo Mig sweep in which flights led by James and Olds destroyed seven Communist MiG 21s with no U.S. losses, the highest MiG kill total of any single mission during the Vietnam War.[7] He earned the Distinguished Flying Cross "for extraordinary achievement while participating in aerial flight while serving as a pilot and as Vice Commander."[8] Olds had personally chosen James to lead combat operations for the 8th, and later wrote

6. Grier, "The Chappie James Way."
7. "General Daniel James Jr.," Biographies.
8. "Daniel James - Recipient." n.d. The Hall of Valor Project. Accessed October 10, 2020. https://valor.militarytimes.com/hero/45297.

the following about his good friend, "Everybody loved Chappie for his great personality, his glib talk, and the sheer ease with which he connected with the men."

The Air Force sent James to Wheelus Air Base in the Libyan Arab Republic in August 1969 as commander of the 7272d Fighter Training Wing. The time James spent in Libya—from fall 1969 until spring 1970 — was critical because Muammar al-Gaddafi, who had led a successful *coup d'etat* against King Idris in September 1969, wanted the Americans out immediately. James recalled having a standoff with Gaddafi, he said that "I told him to move his hand away. If he had pulled that gun, he never have cleared his holster."[9] After the United States decided to evacuate the country, James directed the operation.

James returned to the U.S. in December 1967 as a wing vice commander at Eglin Air Force Base, Fla. The position entailed speeches in the community and Washington, D.C. Officials began to notice James' public relations skills. A forceful and convincing speaker, he was defending the Vietnam War at a time the Pentagon and the White House were coming under increasing criticism for the burden the fighting placed on the poor and minorities. Eventually James won over one powerful mentor in particular: Melvin Laird, President Nixon's Secretary of Defense.[10]

Once promoted to brigadier general in 1970, Secretary Laird had the Air Force assigned James as the deputy assistant secretary of defense for public affairs. By 1974, James continued his quick climb up the flag officer ranks by attaining lieutenant general in 1974, and a year later the rank of general when he was appointed to his final assignment as the commander of North American Aerospace Defense Command, which oversaw the operational command of the Air Force over the United States and Canada.[11] James died of a heart attack on Feb. 25, 1978, less than a month after retiring from the service he loved.

James is widely known for his speeches on Americanism and patriotism, for which he was editorialized in numerous national and international publications. Excerpts from some of James' speeches were read into the Congressional Record. He was awarded the George Washington Freedom Foundation Medal in 1967 and again in 1968. While stationed at Eglin, the Florida State Jaycees named James as Florida's Outstanding American of the Year for 1969, and he received the Jaycee Distinguished Service Award. He received the Arnold Air Society Eugene M. Zuckert Award in 1970 for outstanding contributions to Air Force professionalism. His citation read "... fighter pilot with a magnificent record, public speaker, and eloquent spokesman for the American Dream we so rarely achieve." In 1971, the Arnold Air Society bestowed upon him the title of honorary national commander.[12]

Other civilian awards that James received include:

1969: Builders of a Greater Arizona Award
1970: Phoenix Urban League Man of the Year Award, Distinguished Service Achievement Award from Kappa Alpha Psi Fraternity
1971: American Legion National Commander's Public Relations Award, Veteran of Foreign Wars Commander in Chief's Gold Medal Award and Citation
1975: Capital Press Club, Washington, D.C., Salute to Black Pioneers Award
1976: Air Force Association Jimmy Doolittle Chapter Man of the Year Award, Florida Association of Broadcasters' Gold Medal Award, American Veterans of World War II Silver Helmet Award, United Service Organization Liberty Bell Award, Blackbook Minority Business and Reference Guidance Par Excellence Award, American Academy of Achievement Golden Plate Award, United Negro College Fund's Distinguished Service Award, Horatio Alger Award, VFW Americanism Medal, Bishop Wright Air Industry Award, and the Kitty Hawk Award (Military).

9. Grier, "The Chappie James Way."
10. Grier, "The Chappie James Way."
11. Grier, "The Chappie James Way," and Joseph, "Daniel James, First Black to Be a Full General, Dies." The New York Times. (The New York, New York. February 26, 1978.) https://www.nytimes.com/1978/02/26/archives/daniel-james-first-black-to-be-a-full-general-dies-arrested-for.html.
12. Timothy Sandland, ed., "102 IW History File: General Daniel 'Chappie' James Jr.," accessed November 25, 2020, www.102iw.ang.af.mil/Media/Seagull-Archives/2018/february.

Chappie James in Korea, with a P-51 Mustang.

He was awarded honorary doctor of laws degrees from the University of West Florida in 1971, the University of Akron in 1973, Virginia State College in 1974, Delaware State College in 1975, and St. Louis University in 1976.[13]

Chappie James' legacy will live on, and not just in memory. There are multiple tributes that bear his name in Pensacola, Fla. The Chappie James Museum and Flight Academy is located at the site of his childhood home and mother's school on MLK Drive. And in July 2020, 100 years after Chappie's birth, Florida Gov. Ron DeSantis approved the naming of the new Pensacola Bay Bridge to honor his legacy. The Board of the General Daniel "Chappie" James, Jr. Memorial Foundation released a statement that summarizes how James should be remembered, "The legacy of General James' commitment to hold our nation's hand during times of difficulty and challenge, always mindful of his mother Lillie Anna James' admonition to her young students – thou shalt not quit!" In conjunction with the bridge naming, plans are moving forward for a Memorial Park landing to include a statue of the general and his F-4 aircraft.[14] They fitting memorials to a man whose career and achievements lifetime actions are exemplary.

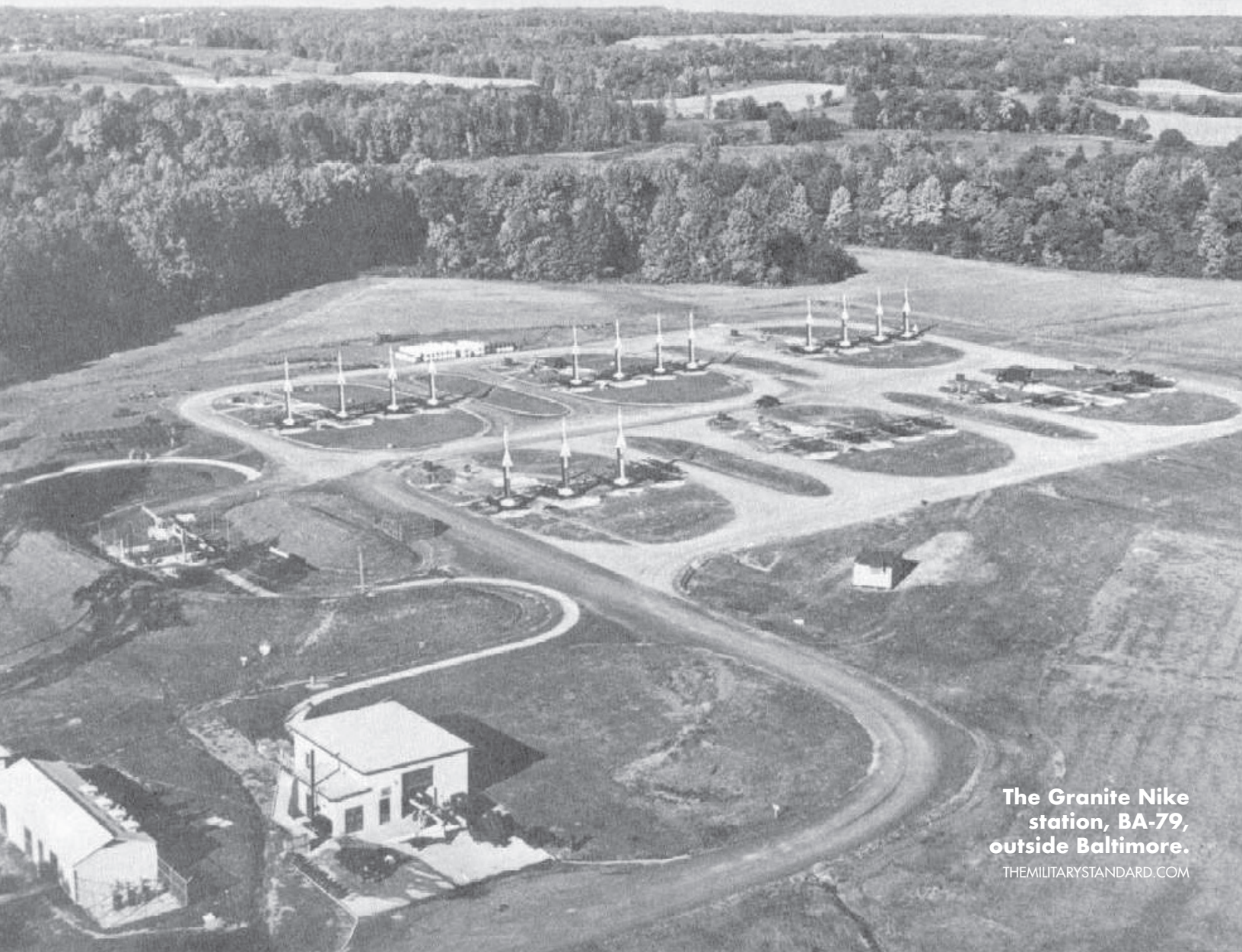
James is buried at Arlington National Cemetery.

Gen. Daniel "Chappie" James Jr. is a towering figure of Air Force history. His journey from private pilot, to Tuskegee Airman, to military pilot in three wars, to 4-star operational boss. He participated in one of the most storied and significant aerial combat operations of the Vietnam War. At NORAD he defended U.S. airspace from nuclear attack at the height of the Cold War. James blazed a trail of greatness as he simultaneously served as a pathfinder on the trail to equality. ▲

13. Sandland, ed., General Daniel 'Chappie' James Jr.
14. Staff Reporter, "General Daniel 'Chappie' James Jr. Memorial Foundation Inc. Celebrates Signing of Senate Bill 78 News Break," News Break Pensacola, FL (SouthSantaRosaNews.com, July 2, 2020), https://ssrnews.com/general-daniel-chappie-james-memorial-jr-foundation-inc-celebrates-signing-of-senate-bill-78/.

‘Not in my backyard’

Nike missiles in rural Maryland



The Granite Nike station, BA-79, outside Baltimore.

THEMILITARYSTANDARD.COM

By Lt. Col. BRENDA A. REED

While quiet today, during the early 1950s, residents in the small rural town of Granite, Md., were in turmoil. Located west of Baltimore, Granite was selected by the U.S. Army as one of eight locations around the city where the military would build a Nike missile site. In a world of Soviet aggression, the United States had a plan to defend its land and deter its enemy, which meant this sleepy town was about to see a lot more action than cows and horses. The era of the Nike missile had arrived in Granite.

National Security Council Report 68 (NSC-68), a study ordered by President Harry Truman to review the national security policy in light of the knowledge that the Soviets had an atomic bomb, was completed in early 1950 and presented a bleak warning: Within the next four years, the Soviets would have the capability to attack the United States in its homeland through Soviet buildup of atomic weapons and long-range bombers. The report went on to state that the Soviets "could deliver between 75 and 125 atomic bombs on targets in the United States, unless defenses are greatly increased."[1] The United States needed a plan to meet this threat and NSC-68 recommended "defense spending would need to rise to $40 billion; almost a 300 percent increase over the Pentagon's 1950 budget."[2] Shortly after the report was submitted, North Korea with Soviet backing attacked South Korea, reinforcing the need for the United States to deter Soviet aggression and build up its homeland defense. The "Air Force believed that two strategic concepts, deterrence and defense, if fully supported, would prevent Soviet bombers from getting close to American cities."[3] However, it was the U.S. Army that had a solution for this dilemma.

The Army began developing an anti-aircraft missile in the late 1940s, before NSC-68. It conducted tests of the Nike missile in White Sands, N.M., and in November 1951, a Nike missile destroyed a QB-17 drone.[4] The Nike project, named after the Greek goddess of victory,[5] and eventually included an inventory of missiles named for Greek gods — Ajax, Hercules, and Zeus. The Nike prototypes, developed by Western Electric, Bell Laboratories, Douglas Aircraft Co., among others, were built to defend against high-altitude Soviet bombers should they penetrate American aerial defenses and reach U.S. airspace.[6]

Nike Ajax

The first Nike missile developed for the Army was the Nike Ajax, a 34-foot long two-stage liquid-fueled surface-to-air missile with a range of 25-30 miles capable of delivering three high-explosive warheads against targets up to 70,000 feet in altitude. This missile, the "first supersonic surface-to-air missile system to become operational in the Free World,"[7] provided a solution to the Air Force belief that "two strategic concepts, deterrence and defense, if fully supported, would prevent Soviet bombers from getting close to American cities."[8]

Because development of the Nike missiles had made more progress than other national defense options, the Department of Defense supported the Army's Nike project and, in 1952, it established the first production facility with the goal of 1,000 Ajax missiles by the end of the year, and 1,000 missiles in each month afterwards.[9]

Simultaneous to the start of Ajax missile production, the Department of Defense acquired land around major U.S. cities to house the Nike missile installations. Nike sites located in the suburbs formed rings around major cities, providing protection to government, industry, military, and commercial sites vital to the country. The Granite site, named BA-79 (BA stood for Baltimore; 79 for the location on the ring, clockwise from 0-100), was located in rural farm fields of Baltimore County and was part of the system protecting Baltimore shipyards,

1. John C. Lonnquest and David F. Winkler, *To Defend and Deter: The Legacy of the United States Cold War Missile Program* (Champaign, IL: U.S. Army Construction Engineering Research Laboratories, 1996), 56.
2. Lonnquest, *To Defend and Deter*, 31.
3. Lonnquest, 57.
4. Lonnquest, 57.
5. Mark A. Berhow. *US Strategic and Defensive Missile Systems: 1950-2004* (Oxford: Osprey, 2005), 18.
6. Lonnquest, 56.
7. Berhow, 19.
8. Lonnquest, 57.
9. onnquest, 56.

Sparrows Point steel mills, the Martin Airplane Co. in Middle River, and the large chemical and ordnance facilities of Aberdeen Proving Ground and Edgewood Arsenal. The Army built a total of eight Nike sites in the Baltimore ring, with three of these, including Granite, being double sites containing twice the number of missile launchers (24) as the rest. It constructed BA-79 in 1954 and activated it on March 28, 1956, as part of the Baltimore-Washington Defense Area, commanded at Fort Meade, Md.[10]

Nike installations

Nike sites were comprised of three parts — the magazine and launch area, the integrated fire control (IFC) area, and the administrative area. The launch area was where the missiles were stored, maintained, and, if needed, launched. Most launch areas contained 2-3 magazines, while double sites contained 4-6. Each underground magazine could store 10-12 Ajax missiles, a shelter for the crew during launch, controls, ventilation systems, and the elevator on which the crews transported missiles from the magazine below ground to above ground launchers. Magazines were self-contained units, independent and unconnected from the other magazines. Other structures in an Ajax launch area were the missile assembly building, a 10-foot earthen berm surrounding the fueling area, and the generator building.[11] Later during the Nike Hercules era, the Army replaced the berm by a warhead assembly building, and a double fence patrolled by guard dogs surrounded the launch area. Three guard houses controlled access for both soldiers and visitors alike.[12] Today at BA-79, except for the guard shacks, these original buildings still exist along with the six original magazines much like they did in the 1950s and '60s.

Within line of site of the missiles, usually at least 1,000 yards away, was the IFC. It was here that soldiers tracked both the target and the missiles. The IFC also operated several different types of radar enclosed in domes, along with antennae, generators to power the equipment, warning and tracking systems, and a maintenance facility. At the Granite facility, the IFC was located about a mile down the road from the launch and administrative areas. Today the facility is an unused open field with U.S. Government restricted access warning signs posted at regular intervals along the high perimeter fence. All the buildings and radar domes have been demolished.

The administrative areas of the Nike sites contained the offices, mess hall and barracks. These were often co-located with either the IFC or the launch area. At BA-79, the two administrative buildings were located beside the launch area. Today, the original buildings are still in use, housing the headquarters of Civil Air Patrol's Maryland Wing, who leases the administrative and launch areas of the site from the State of Maryland.

Approximately 225 personnel were employed at most Nike sites between the three areas. Those who worked at the site tended to be close communities as oftentimes the locals were not welcoming to Nike personnel. Early Nike sites that were not co-located with military bases would build housing for personnel, including Army housing for spouses and children. Later as the sites transferred to the National Guard, the unit saved costs by having personnel commute from their off-base housing.[13] The Granite site had both personnel residing in barracks and commuters employed during the years it was operational.

Around the nation, the Department of Defense typically built Nike sites in the areas surrounding major cities. The U.S. government had to either use existing military bases or acquire land in the suburbs. Trying to fit into the suburban neighborhoods, the military constructed buildings to blend into the area, often looking like school buildings. The Army conducted a public relations campaign, including open houses and state fairs, to assure residents that the Nike sites were very safe. This was especially important after two incidents. In April 1955, the Baltimore Area Headquarters at Fort Meade accidentally launched a Nike Ajax that resulted in the missile disintegrating in the air roughly 3 miles from the launch site with small pieces falling over the newly built Baltimore-Washington Parkway.

10. Mark L. Morgan, and Mark A. Berhow, *Rings of Supersonic Steel: Air Defenses of the United States Army 1950-1979, an Introductory History and Site Guide*. (Bodega Bay, CA: Hole in the Head Press, 2010), 83-84.
11. Berhow, 19-20.
12. Morgan, 27.
13. Lonnquest, 99.

Other than one soldier with slight burns, no one was injured, and no accidents occurred on the parkway, averting a public relations disaster.[14] And in May 1958 an accidental Ajax explosion in Middletown, N.J., resulted in the death of 10 people.[15]

Often, with a "not in my backyard" attitude, local communities were not happy about the placement of the Nike sites. Exercising eminent domain, the military purchased property from local landowners who may not have been willing to sell. Nearly 45 acres of farmland was needed in Granite. The military bought the 28 acres used to develop the BA-79 administrative and launch areas from local farmer Thomas Blunt, who took the U.S. government to court to force payment of $1,000 per acre instead of the initial $100 per acre offered.[16] Stories are still told about the contention between the Nike site and local Granite residents.

Nike Hercules

Even while the Nike Ajax program was starting around the nation, its limitations were apparent, and development of the next generation of Nike missiles, the Hercules, began in December 1952. Hercules was a two-stage solid propellent missile approximately 40 feet long.[17] It had a range of more than 90 miles and could reach enemy aircraft up to 150,000 feet high.[18] The Nike Hercules could carry either a conventional or nuclear warhead. At a low yield, the Hercules' nuclear warhead could equal 2 kilotons of TNT or 40 kilotons of TNT high yield. For comparison, the Little Boy atomic bomb that destroyed Hiroshima was 15 kilotons.

In the 1950s, in sharp contrast to today, most Americans accepted the idea of atomic weapons because information regarding their need, safety, and operations were made publicly available. In fact, most Americans accepted the military's use of atomic antiaircraft weapons.[19]

The Department of Defense tested both Ajax and Hercules in White Sands and Red Canyon, N.M., and crew training was conducted at Fort Bliss, Texas. Crews consisted of 14 officers and 123 enlisted per battery who trained together for five weeks.[20] All crew members in the various classes completed their training as a "package" at Fort Bliss to form cohesive units. Crews assigned at the Nike sites participated in annual practice tests at Fort Bliss, named Short Notice Annual Practice (SNAP), with little advanced notice provided to the crews. In the 1950s, these tests were competitive as crews battled for "best battery crew" in the nation.[21] Col. Joe Zang, a National Guard missile mechanic at BA-79 who lived five minutes from the site, described crew schedules as 24-hour shifts followed by two days off when on "hot status."[22] When crews were not on active alert, boredom could be a problem in between drills. A photograph of an Army officer golfing on a nine-hole chip-and-putt golf course at Granite in 1955 tells a visual story of crew downtime.[23]

In the early 1960s, the military converted many Nike Ajax sites to Nike Hercules sites while it closed others. Depending on local conditions only one-third to one-half of former Ajax sites were needed due to the Hercules' increased range and explosive power. Conversions occurred between 1958 and 1962 with the Ajax completely phased out in the United States by November 1963.[24] During this time, additional sites built specifically for Nike Hercules were placed near seven Strategic Air Command bases, as well as in Alaska, Hawaii, and Greenland.[25] By the program's end, 134 Hercules batteries were in service around the nation. At the Granite site, the military converted two Ajax magazines to Hercules in 1958-59, resulting in three types of magazines: two

14. Lonnquest, 306.
15. Lonnquest, 97.
16. Joan Jacobson. 2000. Nike missile site's future pondered. *Baltimore Sun*, September 29. https://www.baltimoresun.com/news/bs-xpm-2000-09-29-0009290016-story.html (accessed September 16, 2020).
17. Missile and Munitions Center and School. 1970. *Nike Missile and Test Equipment.* Redstone Arsenal, AL: Department of the Army, 8.
18. Lonnquest, 61.
19. Christopher J. Bright, *Continental Defense in the Eisenhower Era: Nuclear Antiaircraft Arms and the Cold War* (Basingstoke: Palgrave Macmillan, 2010), 2.
20. Lonnquest, 356.
21. Lonnquest, 99.
22. Joseph Zang, interview by author, Granite, MD, December 30, 2018.
23. Todd A. Hanson, *Archaeology of the Cold War* (Gainesville, FL: University Press of Florida, 2016), 149.
24. Lonnquest, 154.
25. Morgan, 25-26.

"A" magazines (Ajax), two "B-Universal" magazines (Hercules), and two "C" magazines (Ajax-modified for Hercules). Each of the four Hercules magazines, could store six missiles for a total of 24.[26]

Maryland was the first state in the continental United States to have Nike Hercules sites under the operational control of the National Guard. On December 11, 1962, control was handed over to the 1st Missile Battalion, 70th Artillery, Maryland Army National Guard, with its headquarters at BA-79 in Granite.[27]

Beginning of the End

Even as Hercules operations were expanding and U.S. taxpayers poured $7.5 billion into the Nike system, Congress began to question the need for a defensive system against Soviet bombers after the Soviets launched the Sputnik satellite in 1957. Despite these concerns, the Nike program continued with the next Nike missile in development: Nike Zeus, a missile capable of intercepting an intercontinental ballistic missile (ICBM). Zeus was larger and more powerful than the Hercules, and the military successfully tested it in 1963. The Kennedy Administration, however, had serious concerns with the Zeus' ability to defend against possible Soviet attacks and canceled the Nike Zeus program later that year.[28] This decision was the beginning of the end of the Nike era as the U.S. government, losing faith in the ability of surface-to-air missiles to attack ICBMs, began to deactivate some Nike units and by November 1973, with a few exceptions, the Army directed the rest of the units to be deactivated no later than May 31, 1974.[29] In Maryland, the Washington-Baltimore defense area was deactivated in April 1974 and BA-79 was officially closed in August 1974.

Today, Nike sites around the nation have been destroyed, fallen into disrepair, or used for other purposes such as a police training academy or, as in Gardner, Kan., a middle school appropriately named Nike Middle School. In San Francisco, SF-88 was preserved and eventually became part of the National Park Service. Park volunteers who worked at the site during the Nike-era continue to lead talks for the public on the weekends.

The Department of Defense turned over the Granite launch site to the State of Maryland for use as a training facility while the IFC was converted to a conventional armory.[30] The armory at the Granite IFC area eventually fell into disrepair and the government demolished all of its buildings, leaving a large field of grass with a fence surrounding it and "off limits" signs to keep the public out. The State of Maryland used BA-79's launch site and administrative area as a training facility and a state police K-9 training area until 2014 when it was leased to Civil Air Patrol to become the headquarters for Maryland Wing. The wing uses the two administrative buildings for offices, training space, and an operations center, as well as home to Civil Air Patrol's Granite Cadet Squadron, whose unit number MD-879 acknowledges Nike site BA-79.

The actual launch site and associated buildings sat unused and fell into disrepair, overgrown with trees and brush while the underground magazines filled with water. In 2018, Maryland Wing members began restoring the launch area to its 1965 look with the eventual goal of opening this piece of aerospace history to the community for educational tours and converting the warhead assembly building into a display area.

The Nike missile program officially began in 1950 and ended in 1974 in the continental United States. For more than two decades, the missiles sat amid the suburban population around the largest U.S. cities, making the Cold War a harsh reality for many and providing a "graphic testimony to the severity of the tensions between the United States and Soviet Union."[31] While many Nike sites no longer exist, the Granite site and its restoration will allow the community to learn more about this unique part of our nation's aerospace and military history.

26. Morgan, 84.
27. *35th Artillery Brigade Air Defense*. ca. 1966. United States Army Air Defense Command, 92.
28. Morgan, 63.
29. Morgan, 68.
30. Joseph N. Tatarewicz, "Granite Nike Missile Base History Project: Final Report", Granite, MD: Granite Historical Society, 2000, 4.
31. Lonnquest, 128.

An aerial photo of Nike site BA-79, outside Baltimore, adjacent to the headquarters of Civil Air Patrol's Maryland Wing.

Cold War history in the backyard

Nike air defense site renovation has become part of Maryland Wing's educational outreach

By Lt. Col. BRENDA A. REED

Anyone driving into Civil Air Patrol's Maryland Wing headquarters, in a rural part of Baltimore County, will notice the static Cessna 182 and the Sept. 11 memorial. But many do not immediately notice the piece of aerospace history on the lower part of the wing's 28-acre campus: BA-79, a Cold War-era Nike missile site that once housed surface-to-air missiles ready to defend Baltimore against possible Soviet aggression. This article spotlights the Cold-War-era Nike missile program, Maryland's use of the BA-79 site, and the wing's renovation of the site to preserve and educate CAP members and the public about Cold-War history in the headquarters' backyard.

In February 2014, Maryland Wing leased property from the State of Maryland which includes a former Nike base in Granite, Md. Within this agreement, Maryland Wing accepted responsibility for maintaining the property and buildings. The wing staff immediately occupied the site's two administrative buildings. The remainder of the property went mostly unused, and the existence of the site's missile features were obscured – both literally and figuratively – as the underground missile silos and magazines, filled with rainwater, were locked for safety, and the remaining above-ground structures were covered by brush and trees. Consequently, the Nike site was a piece of history trapped in time and forgotten.

Nike Missile Program

The United States began the Nike missile program in the early 1950s to deter Soviet aggression and defend key military, government, commercial, and industrial sites with rings of anti-missile batteries surrounding key American cities. The project, named after the winged Greek goddess of victory, began with the Nike Ajax, a 34-foot-long two-stage liquid-fueled surface-to-air missile with a range of 25-30 miles – capable of delivering three high-explosive warheads against targets up to 70,000 feet in altitude.

It was during the time of the Ajax missile development that the Granite site was selected and procured, despite protests from residents. Construction began in 1954 with activation on March 28, 1956, as part of the Washington-Baltimore Defense Area; BA-79 was part of the ring of eight Nike sites around Baltimore.[1] The site's name, BA-79, stands for Baltimore (BA) and for its location on the ring (79), which was clockwise from 0-100. BA-79, located west of the city and part of the system protecting Baltimore shipyards, Sparrows Point steel mills, the Martin Airplane Co. in Middle River, and the large chemical and ordnance facilities at Aberdeen Proving Ground and Edgewood Arsenal, was a double site containing 24 missile launchers, twice the number of most Nike Ajax sites. Between 1958 and 1962, the Army replaced its Nike Ajax missile program with Nike Hercules,[2] which used a two-stage solid-propellent missile approximately 40-feet long.[3] It had a range of more than 90 miles and could reach enemy aircraft at altitudes as high as 150,000 feet.[4] The Hercules could carry either a conventional or nuclear warhead. The Granite site was converted between March 1958 and February 1959.[5] Eventually the Nike program ended, and BA-79 closed in 1974.

Nike sites were typically comprised of three parts: administrative area, launch area, and the integrated fire control (IFC) area from which the missiles were tracked. The Granite IFC location is about a mile down the road from the Maryland Wing headquarters and is not part of the wing's lease. The wing lease includes both the administrative and launch areas, using the two large administrative buildings for wing offices, classrooms, an operations center, and a cadet squadron headquarters. These buildings, along with the buildings in the launch area, are from the original Nike base. Upon moving in, the wing cleaned and renovated the administrative buildings, but it initially left the lower area — the missile launch site and its buildings — untouched except as a storage area.

1. Mark L. Morgan, and Mark A. Berhow, *Rings of Supersonic Steel: Air Defenses of the United States Army 1950-1979, an Introductory History and Site Guide.* (Bodega Bay, CA: Hole in the Head Press, 2010), 83-84.
2. Morgan, 24.
3. Missile and Munitions Center and School. *Nike Missile and Test Equipment.* (Redstone Arsenal, AL: Department of the Army, 1970), 8.
4. John C. Lonnquest and David F. Winkler. *To Defend and Deter: The Legacy of the United States Cold War Missile Program* (Champaign, IL: U.S. Army Construction Engineering Research Laboratories, 1996), 61.
5. Morgan, *Rings of Supersonic Steel,* 84.

CHIEF TOM REED

Magazine 6 at the start of the first official workday, Sept. 15, 2018.

LT. COL. BRENDA REED

Magazine 6 after being cleared and painted, Oct. 23, 2020.

The BA-79 Nike launch site includes six sections, called magazines, each with a self-contained underground missile storage chamber, blast-proof control room, and an elevator well from which the elevator would transport the missiles to and from the aboveground launch area. Entrance and exits included one set of double doors with stairs leading to the underground areas, and two escape hatches with ladders (one at the control room and one storage chamber). Various air vents and blast pads were above ground.[6] The former rail system for moving missiles to the launchers no longer exists, although holes remain in the concrete where the rails once stood. Asphalt and concrete surround the magazines, although in some areas the asphalt has deteriorated with plant life growing throughout.

LT. COL. BRENDA REED

Retired Army National Guard Col. Joe Zang heads down the steps of a BA-79 magazine following an interview. Zang was a missile mechanic at the site in the 1960s.

Restoration of BA-79

In the spring of 2018, retired U.S. Air Force Chief Master Sergeant Thomas Reed, the Maryland Wing command chief, toured the launch area and realized the significance of this part of the property. Seeing the historic value and educational opportunities the site offered, as well as linking the site to Civil Air Patrol's aerospace education mission, he began to clear the brush while investigating the feasibility of restoring BA-79 with the eventual goal of hosting tours to both members and the community. Reed knew the site could never be functional, but he envisioned renovating the missile site to the look of 1965, which is the date of many photos of BA-79.

After seeking official approval to restore the site from the Maryland Wing commander Col. Joe Winter, Reed held the first workday on Sept. 15, 2018, which was open to Maryland Wing members interested in being a part of this exciting new project. More than 15 members joined forces to begin the years-long process of clearing brush, cutting trees, demolishing derelict sheds not original to the site, removing old fencing, as well as scraping and painting the launch structures and buildings. Since that first day, monthly workdays have been a staple on the wing calendar. As word spread, the volunteer pool expanded to include military members from nearby Fort Meade, groups from the National Security Agency, Boy Scout troops assisting with Eagle Scout projects, CAP squadrons, families, and community members with an interest in the history of Nike sites.

The work changed depending on the needs and weather. After the brush was cleared, the metal structures were cleaned, scraped, and painted to match photos from 1965. Volunteers erected safety rails around the elevator wells, and pumped water from the six underground silos – as deep as 11 feet in places. Volunteer teams scraped and painted the interior of the original warhead assembly building to eventually house a small display area related to the Nike site.

Interesting artifacts

As the site is cleared during the restoration process, workers have discovered several artifacts of unknown origin. While painting the base of a set of magazine doors, Reed noticed graffiti written into the cement: "1956 PFC Crawley." Attempts to locate any documentation about Pfc. Crawley have proved unsuccessful to date. A volunteer discovered an old Schlitz beer can in the underground magazine once the water was pumped out. How or why the can was left in the silo is unknown, but the discarded empty can will remain as an artifact connected to the site's history. More recently, a Baltimore Ravens garden

6. Missile and Munitions Center and School, *Nike Missile and Test Equipment,* 1-15.

MAJ. JOHN RALPH

Retired Air Force Chief Master Sergeant Tom Reed paints stripes on a magazine elevator door.

gnome was discovered deep within one of the air vents with no clear explanation of why it would be hidden within the site.

As work crews pumped the water from each of the underground magazines, volunteers noted markings and signs on the walls, along with any remaining equipment. In one magazine, the painted words "water line" appear to indicate the magazines had been pumped out at least once before.

The restoration team did not find artifacts it expected. Most of the inside workings of the silos had been stripped upon their decommissioning. Electrical boxes, gears, and other equipment were gutted, leaving few material items to learn what the site may have been like originally.

Discovering Nike history

When not working on the physical restoration of BA-79, Chief Reed, along with Lt. Col. Bob Midkiff, Maryland Wing director of emergency services, and Lt. Col. Brenda Reed, Maryland Wing chief of staff, learned more about the Nike sites in general as well as specific details about the Granite site. Their research included visiting another Nike site, conducting oral histories of Nike veterans, and pulling excerpts from books, reports, and online sources. Additionally, the team dedicated a private Facebook group to the restoration, where others with experience or interest share information.

In the fall of 2018, Chief Reed, Cols. Midkiff and Reed, and 2nd Lt. Bambi Midkiff spent a long weekend in San Francisco visiting SF-88, a Nike site in Marin County that is now part of the National Park Service. This site is unique in that after closure, it was maintained in working order. Having made prior contact with the volunteers from this site, the team toured the facility and talked details with the volunteers, all of whom were veterans of the SF-88 Nike site. Hundreds of photographs were taken of all parts of the site, noting small details to aid in the BA-79 restoration. Most helpful were talks with the Nike veterans who volunteer as docents at SF-88. The visit provided Chief Reed with a vision for restoring the BA-79 magazines. While the elevators will never work at BA-79, his plan is to physically clean and paint two of the six underground magazines,

to restore them to what they looked like prior to being filled with water, and clear and paint all above-ground structures to the 1965 appearance.

Chief Reed, along with the two colonels, conducted oral histories with two Nike site veterans. Col. Joe Zang, a retired Maryland National Guardsman who worked as a missile mechanic at BA-79, spent several hours talking about his experiences at BA-79, providing many facts and anecdotal stories about the Granite site, the training the crews received, and general life on a Nike base. Zang donated several items to BA-79, including a plaque he was given after becoming the first enlisted man to fire an Ajax missile during a test at McGregor Range, N.M., on Oct. 5, 1962.

Elliot Deutsch was the second Nike veteran interviewed by the team. Deutsch served as a missile officer with the 54th Battalion at the Nike site on Edgewood Arsenal, east of Baltimore. Deutsch provided specific details about life on a Nike site as well as technical details of the Nike sites, and he donated several technical manuals to the BA-79 restoration effort.

Public Relations

As the restoration of BA-79 has progressed, its popularity with the general public has increased. This is attributed to several in-depth articles and interviews by local newspapers and television, along with public presentations by Chief Reed and Col. Midkiff during the 2018 Maryland Wing conference and the 2019 Civil Air Patrol national conference in Baltimore. Reporters from the *Carroll County Times* and *The Baltimore Sun* spent several workdays at the site interviewing and filming the restoration. Their video and a front-page article provided greater exposure for the project and the history of BA-79 and the Nike program.[7]

An abbreviated version of the article was republished several weeks later in *The Washington Post,* which had a much wider audience.[8] In the article, Chief Reed mentions the painting and the associated cost of the paint. This was read by an employee from Rust-Oleum who contacted Reed with an offer to donate the paint required to complete the project. As of October 2020, Rust-Oleum has donated more than 40 gallons of yellow and black Rust-Oleum paint and brown primer.

Word of the restoration reached a regional audience again in August 2020 when it was spotlighted by Baltimore TV station WBFF in a "Maryland Moments" evening news story. The station archived the video and a written article on their website.[9]

Each media event has resulted in more people learning about the site. The Maryland Wing staff is not conducting tours of the site for the public, but it has been a great recruiting tool for Civil Air Patrol. For many Marylanders, the Nike program is new information for them. The Cold War ended in 1990 and the Nike program's missile site closed nearly forty years ago, so most locals do not realize that there were nuclear missiles sitting in the suburban landscape around Baltimore. Consequently, the public's urge to visit this piece of aerospace history is great. Visitors to the site are also introduced to Civil Air Patrol, its missions, and its efforts in the restoration.

Paying for the Restoration

Historical restoration is not cheap if it is to be done right. The restoration of BA-79 has been funded completely with donations to the project. Larger corporate donations, such as the Rust-Oleum contribution and a large cash donation by Williams Gas Co., who access the property regularly for maintenance on a nearby natural gas line, have been supplemented by many smaller donations from Civil Air Patrol members and the community alike. For three years the site has participated in the annual Giving Tuesday campaign, and its proceeds helped purchase tools and supplies to keep the work going. Several other companies and individuals have provided larger donations, as well as donations in kind.

7. Jon Kelvey, "Nukes in the Neighborhood: Restoration of Nike Missile Site near Carroll County Continues, Years after Closure," Carroll County Times, December 8, 2019. www.baltimoresun.com/maryland/carroll/news/cc-nike-missile-cap-20191208-gnpb5ilh7jbl7kwytdra7fqbf4-story.html.
8. Jon Kelvey, "Restoration of Nike missile site in Maryland continues decades after Cold War-era facility closed," Washington Post, January 18, 2020, www.washingtonpost.com/local/restoration-of-nike-missile-site-in-maryland-continues-decades-after-cold-war-era-facility-closed/2020/01/18/18660778-1cfe-11ea-b4c1-fd0d91b60d9e_story.html.
9. Luke Rollins, "Maryland Moments: The Missiles of Maryland,' WBFF/Fox 45 News, August 14. 2020, www.foxbaltimore.com/news/maryland-moments/maryland-moments-the-missiles-of-maryland?fbclid=IwAR0sHsiFQBdGKLVbWxkCk7sjklOGhYKqIo-O_1QCMOg7724SVOJLCpwyshw.

CHIEF TOM REED

After a full day of pumping March 24, 2019, water still fills the stairwell of a magazine entrance.

One such donation was the Allbrite Pressure Wash Inc., who pressure washed two of the underground magazines. Plans are progressing to create signage and displays for the warhead assembly building.

In 2018, when the restoration was in its infancy, Maryland Wing historian Capt. Patrick Whang worked with the Patapsco Heritage Greenway Project, part of Maryland's scenic byways program, to expand the greenway to include BA-79. The small town of Granite, near which the site is located, was already part of the greenway due to its historic granite mines. The two-year process involved multiple letters, meetings, and phone calls, but in the summer of 2020, Maryland's scenic boundaries program expanded the Patapsco Heritage Greenway boundaries to include the Nike site. Inclusion in the greenway increased availability of grants and funding to continue the Nike restoration.

The project welcomes monetary donations, but its most valuable donations have been the time and energy of volunteers who have spent countless hours cleaning, scraping, painting, hauling, and doing whatever else is needed to restore the site. Organizers intend to recognize donors and volunteers with a tribute in the future display area set to occupy the former warhead assembly area.

Maryland Wing's backyard

While BA-79 is a relic from the Cold War, Civil Air Patrol members along with the local community are striving to restore the Nike missile site to remember and teach about a time in America's history when nuclear weapons were in our backyards. Nike sites are disappearing and there are only a few remaining intact. Maryland Wing is fortunate to have one in their backyard and, with the restoration team's help, it will have a place for the public and its members to learn about this time in our nation's history. With the overgrowth and trees removed from the wing's backyard, its lower campus is now accessible and safe for other CAP activities. In the 1950s and '60s, many communities had a "not in my backyard" attitude towards the Nike missile bases. Now in the 2020s, Civil Air Patrol is embracing a piece of Cold War history in their backyard while getting its members and local community interested in exploring the aerospace history in Granite, Md. ▲

A worthy role model

Air Force major, former CAP cadet, a profile in excellence

Maj. Hila Levy conducted research in Antarctica.

By Maj. TIM BAGNELL

Civil Air Patrol's long and distinguished history bears the fingerprints of people from all walks of life, all parts of our nation, and the world. In turn, as a force, CAP has molded and transformed hundreds of thousands of Americans over the past 79 years. If CAP's core values of integrity, respect, excellence, and service stand out as high standards to be aspired to, then the emergence of individuals who exemplify those values is inevitable. One such example of this is Hila Levy. Her story is one that is one that is worth study and reflection.

Levy joined CAP in 2000 in her native Puerto Rico at the age of 14. Cadet Levy rose quickly through the ranks with a distinguished record of activities and accomplishments, selected as CAP's 2004 Cadet of the Year. That same year, she traded in her CAP cadet uniform for the cadet uniform of the U.S. Air Force Academy. Graduating in 2008, 2nd Lt. Levy graduated at the top of her class earning her place on the Academy's 100-year Honor Roll, and received a Rhodes Scholarship to Oxford University, where she embarked upon her first of many advanced academic degrees.

Earlier this year, while finishing her doctorate of philosophy in zoology at Oxford University, the now-Maj. Levy very graciously spared some time to respond to a series of interview questions.

Was there anything specific that motivated you to join the Air Force?

I had a family legacy of military service, my mom in the Israeli army, her dad in the British army in World War II, my dad and his father and brother in the U.S. Army. Service was something I felt was expected of citizens, and I think it was always something I knew I would follow through with.

I also really wanted to be an astronaut. When I was very young, maybe 3 or 4, my dad would ask me what I wanted to be when I grew up. He tended to really push the astronaut thing. One conversation really stood out in that I told him I wanted to be a zoologist. He said, "No, you will be an astronaut," and I replied, "OK, well I'll be a zoologist on the moon."-- Knowing that didn't make much sense. The irony is that after all the twists and turns in my life, I actually did end up being a zoologist, as close to the moon as I could get so far, Antarctica!

I used to read everything I could get my hands on about NASA, the history of space flight, and other astronauts. I remember doing research about how to become an astronaut,

Levy was a World Ironman competitor in 2013.

COURTESY PHOTO

and a common trend I saw was that many people had gone the military route, with many being Naval Academy graduates. When I was 11, I went to Space Academy (Space Camp for middle schoolers) in Huntsville, Alabama with two friends who were siblings. We spent a weekend staying with their distant cousin, who happened to be a 1961 graduate of the Air Force Academy, Col. (ret) Hector Negroni. I had never heard of USAFA before, but I saw his fighter pilot helmet from Vietnam and a photograph of his entire graduating class hung up on the wall. I knew right then that going there was what I wanted to do. Col Negroni was the first Puerto Rican graduate of USAFA, I found out recently, and I'm proud to have benefitted from his inspiration so young!

When I got home from that amazing summer experience, I started really diving into information about the Air Force Academy. I was fascinated. It was an earlier stage of internet access back then, so I think I annoyed my parents downloading and printing the entire catalog for the university, reading about every required course and summer program, and applying to attend. I got several postcards letting me know that I was too young of course, but that didn't stop me. I think my parents thought it was a 'phase' I would get over, but I never did, it was a goal burned in my mind to achieve. I read about all the different qualifications people had to get in, and noticed that Civil Air Patrol was listed as something in which successful applicants were frequently involved. I searched (again, the early internet!) and discovered that there was a squadron at my dad's Army base, Fort Buchanan in Puerto Rico. As soon as I was old enough to join, I was there and started my path in CAP. I guess you could say everything was really intertwined as a result, my parents' service and support for my pursuit of lofty goals, and figuring out how to chart my route to achieve those.

My time in CAP was fortuitous in that I stumbled upon such an active wing, with some of the top cadet programs in the nation. My cadet squadron (the Col. Clara E. Livingston Cadet Squadron) had recently won national drill team and color guard awards, and many of the older cadets were very experienced in

the program. I know I stood out a little bit coming in without knowing anyone (most other people were recruited by friends or school mates), so I just tried to do my best with testing, athletics, and drill and ceremonies to fit in. My love of aviation history, science, and space was an asset, and I soon found myself helping with aerospace education and was recruited onto the drill team.

At first, CAP was just meant to be a means to an end for me, but it became so much more. Our squadron met from 8 a.m.-4 p.m. every Saturday, plus weekday drill team practices. It ended up being my social circle outside school and my family. I consider most of the older cadets who took me under their wing to be like brothers. Many of them have gone on to have successful careers in the armed forces, and it is great to hear about how they are doing since then. One of my mentors, Rafael Rondón, is now a pilot and reserve squadron commander, and one of my peers went to USAFA with me and graduated in my class, now is an exchange pilot in the Netherlands.

By 2001, I had come up the CAP cadet ranks and needed to attend an encampment to obtain my Mitchell Award. My parents supported my crazy idea to go to Montana for a week that summer. I was a most unusual sight there at Fort Harrison, but it was a major turning point for me in terms of my personal growth, understanding how I was representing my wing or even my island, and also grasping the impact CAP was having on others around the country.

Just a few months later, as a sophomore in high school, 9/11 happened, and the world changed. Many of my friends were enlisting, and the local bases started to shut out all visitors, which meant that the CAP unit couldn't operate as normal. I don't remember all the details now in terms of timeline, but over time, alternate locations weren't able to keep our unit as large as it once was, and attendance started to drop off. We went from having 120 cadets to something like 7-10. I did my best to try and stick with it and teach a lot of aerospace, but the squadron nearly collapsed.

By 2003, I moved to a unit at Muñiz Air National Guard Base, where I went on to obtain my Spaatz Award in February 2004 while I was completing my senior year of high school. In those last few years, I was very active and took on more leadership roles while also trying

COURTESY PHOTO

Levy prepares for a parachute jump at the U.S. Air Force Academy.

to balance school work, college applications, a job at a flying school, and finishing up my private pilot's license. I was well-supported at my cadet squadron by the senior members and encouraged to apply for awards. To my surprise, I ended up being named the Cadet of the Year for my wing, then region, and nationally not long after accepting my appointment to USAFA. This award came as a shock to me and I was very honored and overwhelmed to have had so much support from my wing, and then be well-received at the National Conference, shortly after completing my USAFA basic training.

Were there any milestone or life-changing events?

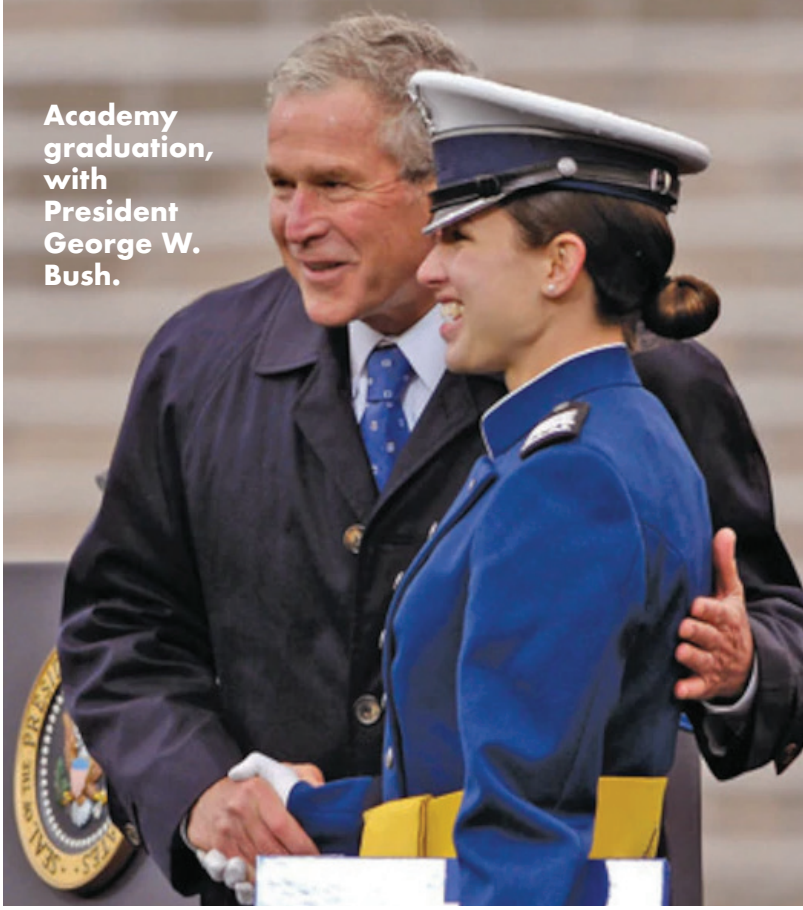
While at the Academy, I really enjoyed the academics, and also wanted to continue flying in

pursuit of my goals. When I was 16, my parents gifted me a flying lesson and the opportunity to complete ground school and pursue my private pilot's license. I soloed at 17 (the minimum age required), and worked an after-school job at the flying school helping to do accounting, flight dispatching, and aircraft maintenance to help support my hours. I completed my license as soon as I could, and really enjoyed flying in Puerto Rico. It was always remarkably beautiful and peaceful to fly along the coastline, see the reefs from the air, and island-hop for my "cross-country" flights.

My freshman year at USAFA, I applied for the Flying Team, which required everyone to have a license previously, and made it onto one of the six spots. There was only one other female cadet selected with me, (who then went on to be the first CV-22 Osprey pilot in the Air Force, and with whom I would work again much later in Air Force Special Operations Command!) Unfortunately, I didn't actually enjoy military flying as much as I thought I might. The terrain (flat Eastern Colorado), checklists, and rigid restrictions were a disappointment to the joy I felt flying in the Caribbean, and after some personal difficulties with a teammate and coaches, I decided to leave the team after a year.

Instead, I poured myself into school, trying to improve my fitness (a real challenge at altitude for me), and trying out some leadership positions in my squadron and for summer basic cadet training (BCT). My junior year, I served as a training NCO for summer BCT, then a group-level operations NCO, and my senior summer, I became the deputy BCT group commander, overseeing the 1,335 cadets of the incoming class of 2011. It was an eye-opening experience and a lot of work, but I learned many valuable lessons from being a part of that team and from my failures, struggles, and successes. The most memorable things were coming to understand team building and relating to how people respond differently to varying leadership styles.

My senior year, I was the executive officer on wing staff, working with Ian Helms as wing commander, my classmate who would go on to be my roommate for two years in England, and essentially my best friend and "brother." I learned a lot from working with Ian, and from getting the opportunity to see what goes into running a 4,000+ cadet wing



Academy graduation, with President George W. Bush.

alongside the Commandant's staff. Ian was a born leader, confident, with a booming voice, a great sense of humor, and a willingness to listen, learn, and ask for help despite his enormous talent and knowledge. In 2015, while deployed as a B-1 pilot, he discovered a mass in his stomach that ended up being lymphoma, and passed away in 2016. My son, whom I was pregnant with at the time, is named Asher Ian after him, and I know that anyone who knew Ian feels his loss. Were he still around, I know he would have achieved his dreams of attending test pilot school, becoming an astronaut, and would have even been a tremendous U.S. president!" ▲

Maj. Levy contributed these responses while preparing for her dissertation defense in England and preparing to move to Montgomery, Ala. This historian cannot adequately express his thanks for her generous donation of time and effort during what was clearly a very hectic period for her and her family. Levy's example stands out among the long line of noteworthy alumni of the Civil Air Patrol. While her story is, in many ways, just hitting its stride, the parts of it that have been written should stand out for all cadets, and young people, in general. Her example epitomizes the core values she swore to uphold as a cadet and clearly has not expired.

CISM

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Four letters that mean post-trauma support for CAP's emergency responders — and how the letters got that way

By Maj .TIM BAGNELL

In the United States, June is National Post-Traumatic Stress Disorder Awareness Month, and its impetus is to raise public awareness about issues related to PTSD, reduce the stigma associated with PTSD, and help ensure that those suffering from the invisible wounds of trauma receive proper treatment.

One such program designed to help combat the effects of this condition is CAP's Critical Incident Stress Management (CISM) Program. The CISM program intends to help CAP's members deal with the stressful and potentially traumatizing events that can arise while performing duties while serving their communities, states, and nation. Developed over the past few decades, CISM teams stand ready to intervene for CAP volunteers during those times of crisis when members are at their most vulnerable. This article traces the origins of the program with a focus on the woman who is largely responsible for its creation.

Dr. Sherry Jones initiated her idea for the CISM program with an 11-page single-spaced document. She admits it was a clumsily written paper citing the need for the program. Dr. Jones began her career in CAP in the early 1990s. She is now a lieutenant colonel in CAP's Michigan Wing. Dr. Jones has extensive experience and education in fields pertaining to traumatic stress management including a doctorate in education (adult education), masters in psychology (crisis management response), she was a 2009 fellow with the American Academy of Experts in Traumatic Stress, and worked as an registered nurse after retiring from a career as an EMT-paramedic. A significant publication of hers related to post-traumatic stress is titled "Confessions of a Trauma Junkie," where she discusses her experiences, both in her CAP role as a volunteer and her professional career, in greater detail.

Recently, Dr. Jones responded to a series of interview questions for the *National Historical Journal* and she shared the following.

BAAA-ACRO.COM

CAP's Critical Incident Stress Management Program was a response to concerns in the wake of Michigan Wing member response to the Northwest 255 crash in 1987 near Detroit Metropolitan Wayne County Airport.

Can you provide a brief summary of your CAP career?

In Michigan Wing, we had folks still reeling, years later, from working the Northwest Airlines Flight 255 airline disaster.[1] Seeing people hurting and stuck in a painful place drove me to seek a method and support for helping the helpers. These responders were not necessarily emergency services workers in their private lives.

After tons of research, discovering Jeff Mitchell's publications on responding to emergency services crises, I compiled an 11-page single-spaced document. That clumsily written paper cited the need for the program and the known processes for dealing with responders exposed to traumatic incidents, was given to Bill Charles. Col. Charles gave the paper back to me and said, "Do it."

We developed a CISM team in Michigan Wing and were operational and responding by 1997. In 1998, I presented CISM to the membership in an Operations workshop as Bill Charles brought it before the Board. By 2000, John Desmarais had a working regulation, and we began training, choosing supportive staff, developing a national team, and responding all over the country to CISM needs. I was honored to contribute to writing guidelines and assisting in revisions of the CAPR 60-5 based on our experiences and changes in the practice. Katrina was our most significant response, and we became a solidarity of members helping members with the support of NHQ and the USAF. Bad things happen to good people, and we had found a way, with the constant support and guidance of the International Critical Incident Stress Foundation (Dr. Victor Welzant), to help them or lead them to more definitive care.

This program was my passion, my purpose, my life for two decades. My nursing job became secondary to permit travel, training, and response. In the beginning, I was a team of one. We developed a dream-team CISM staff at NHQ (God bless Chaplain Don Brown) and worked closely with Operations to make the program sing, to be available when needed, to guide and teach those coming up so they could

1. On the evening of August 16, 1987, a McDonnell Douglas MD-82 crashed shortly after takeoff from Detroit Wayne County Metropolitan Airport, killing all six crew members and 148 of its 149 passengers, and two additional people in automobiles on the one-mile stretch of highway on which it came to rest. The sole survivor was a 4-year-old girl who sustained serious injuries. At the time of the accident, it was the second-deadliest aviation accident at the time in the United States. It is also the deadliest aviation accident to have a sole survivor. The *Los Angeles Times* quoted a Michigan Wing lieutenant colonel, "It was the most gruesome sight…"

replace me. Mental health professionals (MHPs) questioned how a non-MHP could teach and lead (until they took my classes and realized abundant research supported our theory and practice). I needed to know more to help more, and as a paramedic and Trauma RN knew the missing component of an MHP hat might help the program, so I went back to school. I got a master's degree in Psychology (specializing in Crisis Management and Response). The travel and responses were exhausting but incredibly rewarding, and we had seen the first fruits of our labor of love. Unfortunately, the program changed direction, so when asked to reapply for my position, I declined.

What events in your CAP career stand out to you relative to your time serving as a CISM responder?

In "Confessions of a Trauma Junkie," you will find a story about Katrina and the Vietnam vet who touched my heart. He was the single most definitive challenge in my CISM interventions, who permitted sharing his story and his experience with the CISM process. Sarge is one of two people who considered suicide and decided against it with our interventions.

Another was a member whose friend died during a CAP mission in a plane crash. She was several states away, and her command did not think she needed help. I did, but we were limited because we could only go in to help when invited. The member called me, and we talked for hours. Later, when we eventually were permitted to do a formal debriefing with her squadron, she admitted she had a gun and was preparing to end her life until her CISM intervention by telephone.

One young lady in a class broke down and finally faced losses that she had deeply buried for years. She sobbed in my arms for a long time, the beginning of her process of healing. That happened a handful of times, and the members stayed in touch for a short while; when they stopped writing, I knew they were ok. Like a mama seeing her babies fly solidly solo.

Katrina was the most impacting for many reasons. Nothing was easy, and getting a minimal team to respond to cover four bases was a strategic nightmare. At the out-briefing, one young man hugged me and gave his squadron patch, saying he was looking forward to meeting me. "Me" was never a consideration (I had a choice at one point to fight for the program or a "bird," I fought for the program). It brought me to tears because I realized this was the face of hundreds I would never see, or necessarily know about, who were touched by our work. We also out-briefed the two generals and the HQ staff, which was a tremendous privilege.

How do you think the program is doing?

I retired and am not up to date on the program.

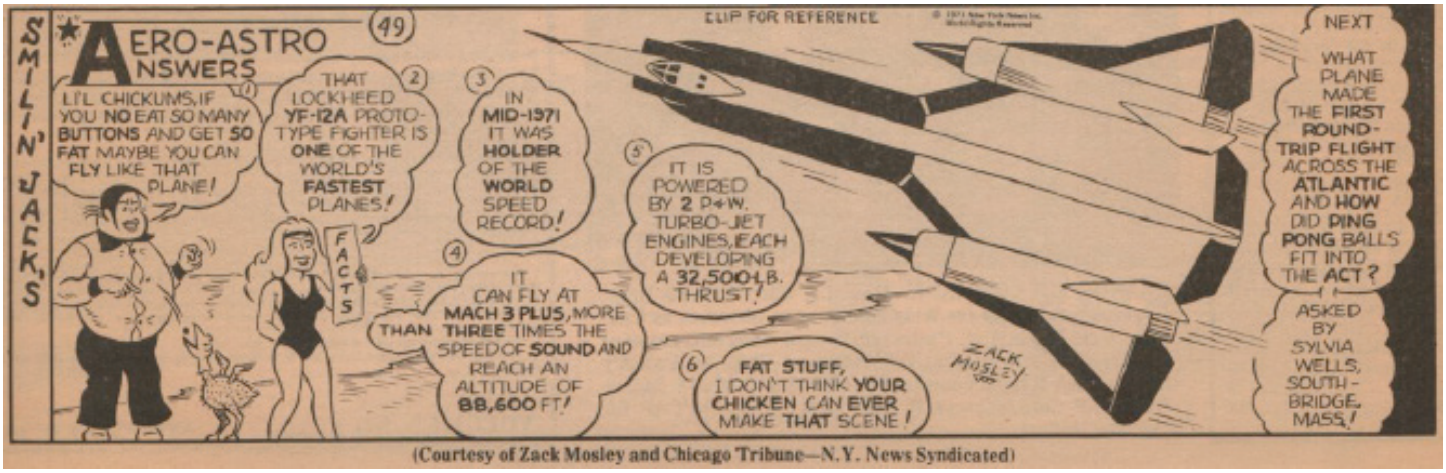
•••

Speaking to the program as it exists today, it is important to note that the CISM program offers many resources and materials to help CAP members cope with difficult experiences in their lives, even without a team being formally called in. These resources include tools to assist in dealing with emotional resiliency. CISM is an active specialty track and CAP's CISM teams serve three primary functions:

1. Provide all members in crisis, a mechanism for them to receive crisis interventions from a team of current and competent CISM and Resiliency Team peer supporters.
2. Provide the opportunity for suicide awareness training for all members.
3. Provide resiliency education and coping skills that CISM members can use to proactively educate all CAP members to create healthy and high-functioning members.

As we all persevere through the current pandemic that will be analyzed for years to come, it is important we do not lose sight of the immediate impacts of these events (and others) on CAP members going out to serve. No one who involves themselves in disaster response walks away unchanged. Whether that involves helping to manage a wing's response from an IC staff position, or working at a warehouse helping to move supplies to locations in need, or assisting in distributing those supplies directly to the public. The CISM teams represent CAP's commitment to its own. They are a reminder to us all that it is OK to ask for help, to reach out when we experience events that shake us and leave us questioning. This program should also remind us that it is equally as important to follow up with our people, check in with them after such ordeals and never forget that we are one CAP team. ▲

From the funny pages…



Zack Mosley, a founding member of CAP from Florida and a CAP Colonel, contributed this New York News syndicated Astro-Answers clip to CAP News in November 1976.

Zack Mosley's syndicated comic strip "Smilin' Jack's Aero-Astro Answers" were in response to aerospace questions submitted from the public, and appeared regularly in newspapers across the country and monthly in CAP News in the 1970s. This one from the November 1976 CAP News details fun-facts about the U.S. Air Force's experimental YF-12 fighter/interceptor. Developed at the height of the Cold War as a potential replacement for the F-106 Delta Dart interceptor. The YF-12 was a twin-seat version of the then-secret single-seat Lockheed A-12 and SR-71 reconnaissance aircraft operated by the Central Intelligence Agency and the Air Force. Unlike the A-12 and SR-71, designs included offensive air-to-air weapons systems that a fire-control officer could launch from the aircraft from 70,000-80,000 feet and strike targets from the ground to 95,000 feet more than 100 miles away using "on-board infrared, radar, navigation, and computer systems, plus a Mach 6 nuclear-tipped missile...." The Air Force revealed it to the public in September 1964 at Edwards Air Force Base in California, and said its "Combination of extremely long rang, Mach 3 cruising speed, and highly advanced airborne detection and fire-control system make it possible for Lockheed's revolutionary YF-12A interceptor to cover the same territory as nine F-106 fighters."[1] The YF-12 never saw active service.

1. J.S.B. Jr., "Nine Times Better," Air Force Magazine, November 1964, pp. 46-47, www.airforcemag.com/issue/1964-11/.

Astronaut Frank Borman exposé panel by artist Charles Wood, first appeared in CAP Times in February 1966.

On the heels of the Mercury space program, the National Air and Space Administration chose Borman in 1962 as part of its second group of astronauts, known as the Next Nine. In December 1965, he set a 14-day spaceflight endurance record as commander of Gemini 7. Later, Borman served on the NASA review board which investigated the Apollo 1 fire, and then flew to the moon with Apollo 8 in December 1968. Wood's panel mentions Borman graduated from West Point in 1950. The U.S. Air Force Academy did not graduate cadets until 1959; so for 10 years, 1948 to 1958, the U.S. Air Force regularly commissioned officers directly from the U.S. Military Academy.

Inactive Numbered Air Forces

Sixth Air Force[1]

Redesignated U.S. Air Force Southern Command in 1963. Inactivated in 1976.

Emblem: On a blue hexagon, a white star charged with a red disc partially over a pair of golden orange wings below a galleon in full sail, golden orange. (Approved July 16, 1943.)

Lineage: The first air units arrived in the Canal Zone in February 1917. By 1940, a rapid increase in the number of units warranted a new organization, and the Panama Canal Air Force was created as a major command. Established as Panama Canal Air Force on Oct. 19, 1940. Activated as a major command on Nov. 20, 1940. Redesignated: Caribbean Air Force on Aug. 5, 1941; 6th Air Force on Sept. 18, 1942; Caribbean Air Command on July 31, 1946; U.S. Air Force Southern Command on July 8, 1963. Inactivated on Jan. 1, 1976. When the command inactivated in 1976, most of its functions and resources passed to Tactical Air Command, which established an air division as the major organization in the area.

Commands: VI Bomber: 1941-1946. VI Fighter: 1941-1942. XXVI Fighter: 1942-1946. XXXVI Fighter: 1942.

Stations: Albrook Field, Panama, Nov. 20, 1940-1976.

Campaigns: Antisubmarine, American Theater.

Decorations: None.

Thirteenth Air Force[2]

Inactivated in 2012.

Emblem: Approved on 18 Jan 1944.

Lineage: Established as Thirteenth Air Force Dec. 14, 1942. Activated on Jan.13, 1943. Inactivated (as a Table of Organization (T/O) establishment) on Feb. 8, 1952. Organized (as a Table of Distribution (T/D) establishment) on Feb. 8, 1952. Discontinued (as a T/D establishment) on Feb. 1, 1953. Activated (as a T/O establishment) on Feb. 1, 1953. Redesignated as Thirteenth Air Force (Air Forces Pacific) on Jan. 16, 2007.

1. "Sixth Air Force," Air Force Historical Research Agency, January 15, 2008, www.afhra.af.mil/About-Us/Fact-Sheets/Display/Article/433899/sixth-air-force/; and Maurer Maurer, Air Force Combat Units of World War II (Edison, NJ: Chartwell Books, 1994), www.armyaircorpsmuseum.org/wwii_6th_Air_Force.cfm
2. Robert B. Kane, "Thirteenth Air Force (Air Forces Pacific) (PACAF)," ed. Daniel L. Haulman, Air Force Historical Research Agency, October 21, 2011, www.afhra.af.mil/About-Us/Fact-Sheets/Display/Article/432189/thirteenth-air-force-air-forces-pacific-pacaf/.

Assignments: US Army Air Forces in the Far East, 13 Jan 1943; Far East Air Forces, 15 Jun 1944-8 Feb 1952. Far East Air Forces, 8 Feb 1952-1 Feb 1953. Far East Air Forces, 1 Feb 1953; Pacific Air Force (later Pacific Air Force/FEAF [Rear]), 17 May 1955; Pacific Air Forces, 1 Jul 1957- 28 Sep 2012.

Major Components
Commands: XIII Fighter Command, 13 Jan 1943-15 Mar 1946; XIII Bomber Command, 13 Jan 1943-15 Mar 1946. Divisions: 2 Air Division, 8 Oct 1962-1 Apr 1966; 6 Air Division, 1 Aug 1968-15 Dec 1969; 27 Air Division, 8 Feb 1966-7 Jan 1976. **Wings:** 3 Tactical Fighter Wing, 13 Sep 1974-18 Dec 1991; 8 Tactical Fighter Wing, 8 Dec 1965-15 Sep 1974 (detached 8 Dec 1965-15 Sep 1974); 15 Airlift Wing, 6 Oct 2006- ; 18 Fighter (later 18 Fighter-Bomber) Wing, 14 Aug 1948-30 Nov 1948; 16 May 1949-30 Sep 1957 (detached 1 Dec 1950-30 Sep 1957); 36 Air Base Wing (later, 36 Wing), 1 Oct 1994-; 56 Air Commando (later 56 Special Operations) Wing, 8 Apr 1967-30 Jun 1975 (detached 8 Apr 1967-30 Jun 1975); 347 Tactical Fighter Wing, 30 Jul 1973-30 Jun 1975 (detached 30 Jul 1973-30 Jun 1975); 366 Tactical Fighter Wing, 27 Jun-30 Oct 1972; 374 Tactical Airlift Wing, 15 Nov 1973-30 Mar 1975; 388 Tactical Fighter Wing, 8 Apr 1966-30 Jun 1975 (detached 8 Apr 1966-30 Jun 1973); 405 Fighter Wing, 9 Apr 1959-31 Jul 1968, 15 Dec 1969-16 Sep 1974; 432 Tactical Reconnaissance (later 432 Tactical Fighter) Wing, 18 Sep 1966-30 Jun 1975 (detached 18 Sep 1966-30 Jun 1975); 463 Tactical Airlift Wing, 15 Dec 1969-31 Dec 1971. Groups: 4 Photo Group, Reconnaissance, c. Jan 1943-15 Jan 1946. 581 Air Resupply Group,7 Sep 1953-20 Oct 1954. **Squadrons:** 26 Fighter-Interceptor, Squadron, 1 Oct 1957-4 Jun 1958; 497 Combat Training Squadron, 31 Oct 1991-29 Jun 2005; 613 Air Operations Squadron, 1 Aug 1994-31 Oct 2000; 848 Aircraft Control & Warning (later 848 Air Defense) Squadron, 1 Jul 1987-30 Sep 1991; 852 Aircraft Control & Warning Squadron, 8 Mar-8 Jun 1960.

Stations: New Caledonia, 13 Jan 1943; Espiritu Santo, New Hebrides, 21 Jan 1943; Guadalcanal, Solomon Islands, 13 Jan 1944; Los Negros Island, Admiralty Islands, 14 Jun 1944; Hollandia, New Guinea, 13 Sep 1944; Noemfoor, Dutch East Indies, 23 Sep 1944; Morotai, Dutch East Indies, 29 Oct 1944; Leyte, Philippine Islands, 1 Mar 1945; Clark Field, Philippine Islands, c. 1 Jan 1946; Ft William McKinley, Philippine Islands, 20 May 1946; Clark Field (later Clark AFB), Philippine Islands, 15 Aug 1947; Kadena AB, Okinawa, Ryukyu Islands, 1 Dec 1948; Clark AFB (later, Clark AB), Philippine Islands, 16 May 1949; Andersen AFB, Guam, 2 Dec 1991; Hickam AFB, HI, 2 May 2005-.

Operations. One of the oldest, continuously active numbered air forces in the U.S. Air Force, Thirteenth Air Force was never stationed in the continental United States. When originally activated as Thirteenth AF at New Caledonia on Jan. 13, 1943, the command consisted of many widely separated and independent units scattered throughout the Pacific. By the end of World War II, they had operated from tropical jungles on more than 40 remote islands, earning the nickname "The Jungle Air Force." Thirteenth AF units initially prevented the further advance of Japanese forces and later took the offensive from the Solomon Islands to the Admiralty Islands, New Guinea, Morotai and the Philippines. The Thirteenth Air Force units participated in five different operation areas in 13 campaigns operating a variety of aircraft including the B-17 Flying Fortress, B-24 Liberator, B-25 Mitchell, B-26 Marauder, P-38 Lightning, P-39 Aircobra, P-40 Warhawk, P-61 Black Widow, C-46 Commando, C-47 Skytrain and L-5 Sentinel. After the war, it became a part of the Far East Air Forces, chartered to defend the western Pacific and the Philippine Islands. With its headquarters, established at Clark AFB, Philippines in May 1949, its units provided staging areas for people and equipment sent to the Korean peninsula during the Korean War. In the 1950s and early 1960s, the command concentrated on training and surveillance activities to maintain a high state of readiness for contingencies. After the escalation of the Vietnam War in the mid-1960s, the Thirteenth AF served as a staging base and logistics manager for units fighting in Southeast Asia and deployed combat units to air bases in Thailand. At its peak, Thirteenth AF was composed of seven combat wings, nine major bases, 11 smaller installations and more than 31,000 military members. From the 1970s to the late 1980s, the command returned to its peacetime mission of training for contingencies. During Operations Desert Shield and Desert Storm, Thirteenth AF provided aircraft and support staff vital to the liberation of Kuwait from Iraqi forces. In June 1991, when Mount

Pinatubo erupted in the Philippines and buried Clark Air Base in volcanic ash, the command led the evacuation of military personnel and their families in Operation Fiery Vigil. With the official closure of Clark AFB on 26 Nov 1991, it relocated and officially established its headquarters at Andersen AFB, Guam, on 2 Dec 1991. The command then moved from Guam to Hickam AFB in May 2005 to allow Thirteenth AF to become a core building block for the new Air Force operational-level component headquarters organization in the Pacific. On 6 Oct 2006, Thirteenth AF was re-designated a component numbered air force headquarters. The Thirteenth AF went inactive in 2012.

Service Streamers: None.

Campaign Streamers: World War II: Bismarck Archipelago; Leyte; New Guinea; Southern Philippines.

Armed Forces Expeditionary Streamers: None.

Twenty-First Air Force[3]

Redesignated 21st Expeditionary Mobility Task Force in 2003. Inactivated in 2012.

Lineage. Established as 23d Army Air Forces (AAF) Ferrying Wing on June 12, 1942. Activated on June 18, 1942, at Presque Isle, Maine, and assigned to AAF Ferrying Command (later, Air Transport Command). Redesignated North Atlantic Wing, Air Transport Command, on July 5, 1942. Redesignated North Atlantic Division, Air Transport Command, on June 27, 1944. Moved to Fort Totten, New York, and redesignated Atlantic Division, Air Transport Command, on September 20, 1945. Assigned to Air Transport Service on October 15, 1947. Moved to Westover Field (later, AFB), Massachusetts, in October 1947. Redesignated Atlantic Division, Military Air Transport Service (later, Military Airlift Command), on June 1, 1948. Moved to McGuire AFB, New Jersey, effective June 1, 1955. Redesignated Eastern Transport Air Force on July 1, 1958, and Twenty-First Air Force on January 3, 1966. Relieved from assignment to Military Airlift Command and assigned to Air Mobility Command on June 1, 1992.. Redesignated 21st Expeditionary Mobility Task Force on 1 October 2003. Inactivated on 19 March 2012.

Assignments. AAF Ferrying Command, 12 June 1942. Air Transport Command, 5 July 1942. Air Transport Service (USAF), 15 October 1947. Military Air Transport Service, 1 June 1948. Military Airlift Command, 1 January 1966. Air Mobility Command, 1 June 1992.

Major Components
Divisions: 76th Air Division, 1 March 1976-30 September 1977 and 15 December 1980-1 October 1985. 322d Air Division, 3 January 1966 -24 December 1968 and 23 June 1978-1 April 1992. 839th Air Division, 1-31 December 1974. **Wings:** 6th Air Refueling Wing, 19th Airlift Wing, 43d Airlift Wing, 89th Airlift Wing, 305th Air Mobility Wing, 436th Airlift Wing, 437th Airlift Wing, 463d Airlift Wing,

3. John Pike, "Twenty-First Air Force and 21st Expeditionary Mobility Task Force," Military (GlobalSecurity.org, May 7, 2011), https://www.globalsecurity.org/military/agency/usaf/21af.htm; and "Numbered Air Forces," Numbered Air Forces Index (Air Force Historical Research Agency, Research Division, Organizational History Branch, August 10, 2007), https://web.archive.org/web/20070810183033/http://afhra.maxwell.af.mil/rso/numbered_air-force_index.html.

521st Air Mobility Operations Wing, and the 621st Contingency Response Wing. Groups: 463d Airlift Group, 521st.

Stations: Presque Isle AAF, Maine, 12 June 1942; Fort Totten, New York, 20 September 1945; Westover AAF (later, AFB), Massachusetts, 1 Oct 1947; and then McGuire AFB, N.J., 1 June 1955-.

Operations: Twenty-First Air Force, headquartered at McGuire Air Force Base, NJ, was one of two numbered air forces in Air Mobility Command. Its mission was to command and assess the combat readiness of assigned air mobility forces over the Atlantic half of the globe in support of Global Reach, which consisted of forces are at more than 55 locations in eight countries. Twenty-first Air Force major units included six active duty wings, two operational flying groups, and two mobility operations/support groups. Additionally, Twenty-first Air Force was the liaison to 40 Air Reserve Component Wings. The Twenty-first Air Force strategic airlift force included C-5 Galaxy, C-17 Globemaster III, C-130 Hercules and C-141 Starlifter aircraft, used to move cargo and passengers worldwide. Its tanker force included KC-10 Extenders and KC-135 Stratotankers used for inflight refueling. Twenty-first Air Force units had a proud heritage of providing airlift in support of national policy under the most difficult circumstances. In Operation Just Cause, Twenty-first Air Force units conducted the largest night airdrop since World War II, leading to the liberation of Panama. Twenty-first Air Force controlled the largest airlift in history during Operations Desert Shield and Desert Storm, ensuring the success the American military response to Iraqi aggression. Additionally, Twenty-First Air Force was instrumental to operations in Bosnia and Southwest Asia. While Twenty-first Air Force has been a critical participant in U.S. combat operations, the command has been far more active supporting peaceful, humanitarian missions. Twenty-first Air Force units flew relief missions after Hurricanes Hugo and Andrew, earthquakes in Armenia and San Francisco, and many other natural disasters. In addition, it controlled the Operation Provide Comfort airlift missions to the Kurds following the Persian Gulf War, the Operation Provide Hope airlift in the aftermath of the collapse of the Soviet Union, and participated in Operation Restore Hope, the humanitarian airlift of food and supplies into Somalia. Twenty-First AF also supported numerous exercises around the world, one of which was CENTRAZBAT, in which C-17s flew multi-national paratroopers non-stop from Pope AFB N.C., airdropping them directly into the Central Asian countries of Uzbekistan and Kazakhstan demonstrating the capabilities of direct delivery. The command could operate in remote, often austere locations throughout Europe, Africa, and South America. On Oct. 1, 2003 the Twenty-First Air Force was re-designated as the 21st Expeditionary Mobility Task Force, which went inactive on March 19, 2019.

Service Streamers: Air Force Outstanding Unit Award (19x).

Campaign Streamers: World War II American Theater.

Armed Forces Expeditionary Streamers: None.

Twenty-Third Air Force (AFSOC)[4]

Inactivated in 2013.

Emblem: Approved on Dec. 27, 2007.

Lineage: Twenty-Third Air Force was originally established on 1 March 1983 at Scott AFB, Illinois as an additional Numbered Air Force in MAC with responsibility for all Air Force SOF units, personnel, aircraft, and installations as well as Aerospace

4. Robert B. Kane, "Twenty-Third Air Force (AFSOC)," ed. Daniel L. Haulman, Air Force Historical Research Agency (U.S. Air Force, July 17, 2009), www.afhra.af.mil/About-Us/Fact-Sheets/Display/Article/433147/twenty-third-air-force-afsoc/.

Rescue and Recovery Service (ARRS) and weather reconnaissance units, personnel and aircraft that were already extant in MAC. On 1 August 1987, Twenty-Third Air Force relocated to Hurlburt Field, Florida. Twenty-Third Air Force later served as the core organization for the formation of Air Force Special Operations Command (AFSOC). Twenty-Third Air Force was subsequently inactivated on 22 May 1990 concurrent with AFSOC's establishment as an Air Force major command (MAJCOM). Twenty-Third Air Force reestablished

Assignments: Air Force Special Operations Command, 1 January 2008-4 April 2013.

Major Components
Commands: 623d Air and Space Operations Center (later 623d Air Operations Center), 1 January 2008 -4 April 2013. **Squadrons:** 3d Weather Squadron, 1 January 2008 28 March 2013 (attached to 1st Special Operations Group after 31 July 2012). 11th Intelligence Squadron, 1 Jan 2008-31 July 2012. 18th Flight Test Squadron, 1 Jan 2008-12 Feb 2013.

Stations: Hurlburt Field, Florida, 1 January 2008-4 April 2013.

Operations: On 1 Jan 2008, Twenty-Third Air Force stood up at Hurlburt Field, Fla., as Air Force Special Operations Command's only Numbered Air Force. It was established as the headquarters to execute AFSOC missions supporting U.S. Special Operations Command. The mission of Twenty-Third Air Force was to provide special operations forces to deployed air commanders. Its mission was to monitor and control global special operations activity to senior leadership; providing trained special operations command and control, intelligence, and weather support elements to theater special operations commanders and executing command and control for air, space and cyberspace operations supporting U.S. Special Operations Command. Its 623d Air and Space Operations Center included personnel and equipment to form joint special operations air components, responsible for planning and executing joint special operations air activities. and integrating special operations with conventional air operations. The 23d Weather Squadron provided global weather coverage for Joint, Army and Air Force special operations missions. The 11th Intelligence Squadron created intelligence products tailored for special operations missions. The 18th Flight Test Squadron evaluated aircraft, equipment, and tactics to assess their mission capability. Upon its inactivation, its mission was transferred to its subordinate 623d Air Operations Center, which was reassigned to AFSOC and renamed the Air Force Special Operations Command Operations Center.

Service Streamers. None.

Campaign Streamers. None.

Armed Forces Expeditionary Streamers. None.

Twenty-Fourth Air Force (Air Forces Cyber)[5]

Inactivated in 2019. Merged with 25 AF to create the 16 AF.

Emblem: Approved on November 25, 2009.

Lineage: Established as Twenty-Fourth Air Force (Air Forces Strategic) on 11 Aug 2009. Activated on 18 Aug 2009. Redesignated as Twenty-Fourth Air Force (Air Forces Cyber) on 7 Dec 2010, then inactivated in 2019 when it merged with 25 AF to form a reactivated 16th Air Force.

Assignments: Air Force Space Command, 18 Aug 2009-28 Jul 2018; Air Combat Command, 28 Jul 2018-.

Major Components
Commands: 624th Operations Center. **Wings:** 67th Cyberspace Wing, 88th Cyberspace Wing. **Groups:** 67th Cyberspace Operations Group, 318th Cyberspace Operations Group, 567th Cyberspace Operations Group, 5th Combat Communications Group, 26th Cyberspace Operations Group, 38th Cyberspace Engineering Installation Group, 690th Cyberspace Operations Group.

5. Patsy Robertson, "Twenty-Fourth Air Force (ACC)," ed. Daniel Haulman, Air Force Historical Research Agency (U.S. Air Force, June 20, 2011), www.afhra.af.mil/About-Us/Fact-Sheets/Display/Article/432270/twenty-fourth-air-force-afspc/.

Stations: Lackland AFB, TX, 18 Aug 2009-.

Operations: The 24AF was originally intended to be a part of the now-defunct Air Force Cyber Command; however, 24AF became a component of Air Force Space Command on 18 August 2009.

Service Streamers: Air Force Outstanding Unit Award: 18 Aug 2009-1 Oct 2010.

Campaign Streamers: None.

Armed Forces Expeditionary Streamers: None.

Twenty-Fifth Air Force[6]

Redesignated from Air Force Intelligence, Surveillance and Reconnaissance Agency on Sept. 29, 2014. Inactivated in 2019. Merged with 24 AF to create 16 AF.

Emblem: Approved 22 May 2007; newest rendition approved on 22 Oct 2014.

Lineage: Established as U.S. Air Force Security Service on 20 Oct 1948. Organized as a major command on 26 Oct 1948. Redesignated as: Electronic Security Command on 1 Aug 1979; Air Force Intelligence Command on 1 Oct 1991. Redesignated as Air Intelligence Agency, and became a field operating agency, on 1 Oct 1993, but became a subordinate organization of Air Combat Command on 1 Feb 2001. Redesignated as Air Force Intelligence, Surveillance, and Reconnaissance Agency, and became a field operating agency again on 8 Jun 2007. Redesignated as Twenty-Fifth Air Force, and became a subordinate organization of Air Combat Command again, on 29 Sept 2014. It then inactivated on 11 Oct 2019 when it merged with Twenty-Fourth Air Force to form a reactivated Sixteenth Air Force.

Assignments. United States Air Force, 26 Oct 1948; Air Combat Command, 1 Feb 2001; United States Air Force, 8 Jun 2007; Air Combat Command, 29 Sept 2014-.

Major Components
Commands: Electronic Security Command, Air Force Intelligence Command, Air Intelligence Agency, Air Force ISR Agency. **Wings:** 6900th Security Wing, 6910th Electronic Security Wing, 6910th Security Wing, 6920th Security Wing, 6920th Security Wing, 6921st Security Wing, 6922d Security Wing, 6931st Security Wing, 6933d Security Wing, 6937th Communications Group, 6940th Air Base Wing (later 6940th Technical Training Wing and 6940th Security Wing), 6940th Electronic Security Wing, 6944th Security Wing, 6950th Security Wing, 6960th Electronic Security Wing. **Centers:** 6901st Special Communications Center.

Stations: Arlington Hall Station, Washington, D.C., 26 Oct 1948; Brooks AFB, Texas, 18 Apr 1949; Kelly (later, Kelly Field Annex, Lackland) AFB, Texas, 1 Aug 1953-.

Service Streamers: None.

Campaign Streamers: None.

Armed Forces Expeditionary Streamers: None.

Decorations: Air Force Organizational Excellence Awards: 1 Jan 1984-31 Dec 1985; 1 Apr 1986-31 Mar 1988; 1 Oct 1991-30 Sep 1992; 1 Oct 1993-30 Sep 1995; 1 Oct 1995-30 Sep 1997; 1 Oct 1997-30 Sep 1999; 1Oct 1999-31 Jan 2001; 1 Jun 2001-31 May 2003; 1 Jun 2004-31 May 2006; 1 Jun 2007-31 Dec 2008; 1 Jan 2010-31 Dec 2011.

6. Daniel Haulman, "Twenty-Fifth Air Force (ACC)," Air Force Historical Research Agency (U.S. Air Force, May 17, 2017), www.afhra.af.mil/About-Us/Fact-Sheets/Display/Article/862154/?twenty-fifth-air-force-acc=%2C.